ORDER NO. MD0108191C2

# Service Manual

## MD Stereo System

## SA-PM37MD

**Colour**

**(S)... Silver Type**

**Area**

**(EB)... Great Britain**

**TAPE SECTION**

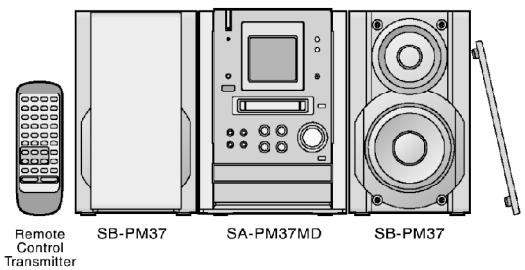
**AR2 MECHANISM SERIES**

**CD SECTION**

**RAE0155Z-1V TRAVERSE DECK SERIES**

**MD SECTION**

**MR3 MECHANISM SERIES**




## SPECIFICATIONS

**Specification**

## ■ Amplifier Section

| | |
|---|---|
| **RMS Power Output** | |
| **(both channels driven)** | |
| **10% total harmonic distortion** | |
| **LOW** | **15 W per channel (6 Ω)** |
| **HIGH** | **3 W per channel (6 Ω)** |
| **Total BI-AMP Power** | **18 W per channel** |
| **PMPO** | **160 W** |
| **Input sensitivity** | |
| **AUX** | **500 mV** |
| **P-MD** | **160 mV** |
| **USB** | **Based on USB Rev. 1.0** |
| **OPT-IN** | **Digital Optical Input** |
| **Input impedance** | |
| **AUX** | **30 k Ω** |
| **P-MD** | **5 k Ω** |
| **Output impedance** | |
| **Headphone** | **16-32 Ω** |

## ■ FM Tuner Section

| | |
|---|---|
| **Frequency range** | **87.50-108.00 MHz (0.05 MHz steps)** |
| **Sensitivity** | **16.3 dBf (1.8 μ V, IHF' 58)** |
| **Antenna terminals** | **75 Ω (unbalanced)** |

## ■ AM Tuner Section

| | |
|---|---|
| **Frequency range** | **522-1629 kHz (9 kHz steps)** |
| **Sensitivity** | |
| **S/N 20 dB** | **500 μ V/m** |

## ■ Cassette Deck Section

| | |
|---|---|
| **Track system** | **4 track, 2 channel** |
| **Heads** | |
| **Record/playback** | **Solid permalloy head** |
| **Erasure** | **Double gap ferrite head** |
| **Motor** | **DC servo motor** |
| **Recording system** | **AC bias 100kHz** |
| **Erasing system** | **AC erase 100kHz** |
| **Tape speed** | **4.8 cm/sec** |
| **Overall frequency response (-6dB at Deck Out)** | |
| **Type I (Normal)** | **35 Hz - 14 kHz** |
| **Type II (High)** | **35 Hz - 14 kHz** |
| **Wow and Flutter** | **0.18 % WRMS** |

## ■ CD Section

| | |
|---|---|
| **Sampling frequency** | **44.1kHz** |
| **Decoding** | **16 bit linear** |
| **Beam source** | **Semiconductor laser** |
| **Wavelength** | **780 nm** |
| **Number of channels** | **2 channels stereo** |
| **S/N ratio** | |
| **SP OUT** | **70 dB (JIS A)** |

| | |
|---|---|
| Wow and Flutter | Below measurable limit |
| Digital filter | 8 fs |
| D/A converter | MASH (1 bit DAC) |

■ MD Section

| | |
|---|---|
| System | MiniDisc Digital Audio System |
| Recording | Magnetic field modulation direct overwrite |
| Reading | Non-contact optical system with semiconductor laser (Wavelength = 780nm) |
| Sampling frequency | 44.1 kHz |
| Coding system | ATRAC/ATRAC3 (MDLP) |
| Number of channels | 2 channels stereo |
| Wow and flutter | Below measurable limit |
| 80 min MD Disc use | 80 min (SP)<br>160 min (LP2)<br>320 min (LP4) |

■ USB DAC Section — Based on USB Rev. 1.0

■ General

| | |
|---|---|
| Power supply | AC 230-240 V, 50 Hz |
| Power consumption | 60 W |
| Standby | 0.9 W |
| Dimensions (WxHxD) | 165.4x228x315 mm |
| Mass | 4.8 kg |

Notes :

1. Specifications are subject to change without notice. Mass and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

* US and foreign patents licensed from Dolby Laboratories.

■ System: SC-PM37MD (EB) — Music Center: SA-PM37MD (EB)

Speaker: SB-PM37 (E)

Panasonic®

# 1. Before Repair and Adjustment

**Disconnect AC power, discharge Power Supply Capacitors C607, C635 and C637 through a 10 Ω, 5W resistor to ground.**

**DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.**

**After repairs are completed, restore power gradually using a variac, to avoid over current.**

**- Current consumption at AC 240V, 50 Hz in NO SIGNAL mode should be ~200mA.**

# 2. Protection Circuitry

**The protection circuitry may have operated if either of the following conditions are noticed:**

**- No sound is heard when the power is turned on.**

**- Sound stops during a performance.**

**The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.**
**If this occurs, follow the procedure outlined below:**

**1. Turn off the power.**

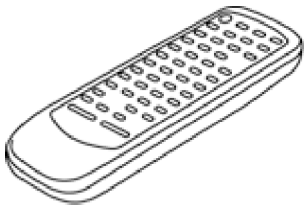
**2. Determine the cause of the problem and correct it.**

**3. Turn on the power once again after one minute.**

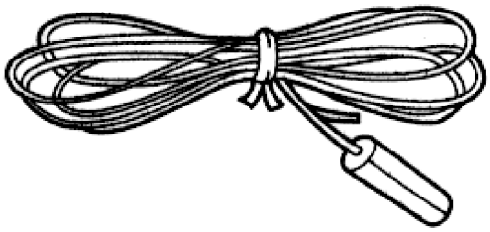
**Note:**
**When the protection circuitry functions, the unit will not operate unless the power is first turned off and on again.**

# 3. Accessories

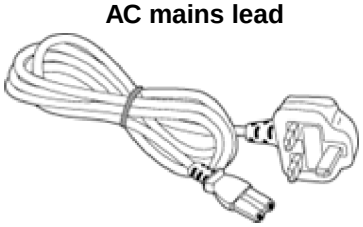
**Remote control transmitter**



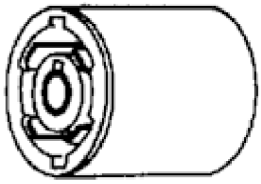
**FM indoor antenna**



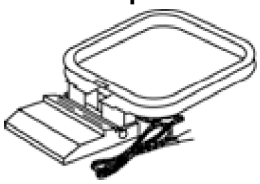
**AC mains lead**



**Power plug adapter**



AM Loop antenna



# 4. Self-Diagnostic Display Function

**This unit is equipped with a self-diagnostic display function, which will be useful during servicing and maintenance.**

**- Refer to the next page for display symbols, symptoms, etc.**

## 4.1. Preparations

1. **A Cr02-positioned blank cassette tape with an erase prevention niche on either Side A or B.**
2. **A normal-positioned music tape with erase prevention niches on both Sides A and B. Both tapes are halfway forwarded in advance.**
3. **The remote controller that comes with this unit.**

## 4.2. Entering Self-Diagnostic Mode

1. **Press [CD ▶/⏸ ] button on the unit with no MD, CD or cassette tape inserted. (The power must be turned on.)**
2. **Press and hold down [STOP ■] button and then press [ ⏶ / ⏭ / FF] button together for 2 seconds or more.**
3. **When [STOP ■] button is released, the message, “TEXT” appears on the display. (Cf. Fig. 1)**

## 4.3. Restoring Normal Display

**- From the F76 display, the normal display does not appear till an error is recovered.**

**- For displays other than F76, press “POWER” button to turn off the power, and then turn on the power.**

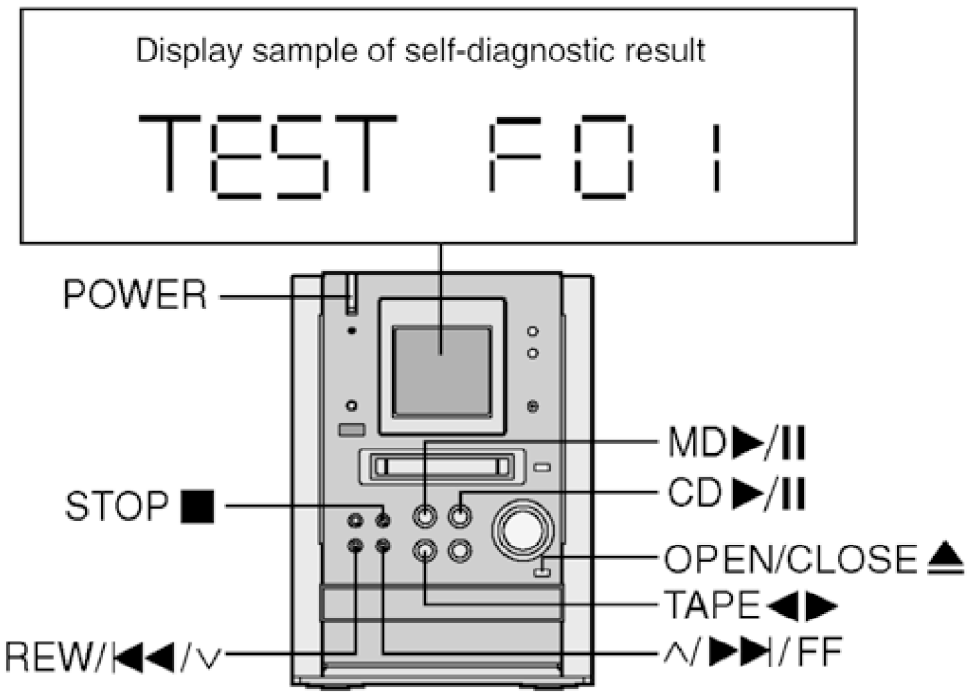



Fig. 1

## 4.4. Clearing Self-Diagnostic Memory

**Errors are stored in the unit memory. To clear memory, press and hold down [STOP ■ ] button for 5 seconds or more during self-diagnostic mode. The message, "CLEAR" appears on the display when memory is erased, and the unit displays the message, "TEST".**
**Memory is not affected by turning off the power or unplugging the socket.**
**Be sure to clear memory after repair is completed.**

## 4.5. Displaying Self-Diagnostic Results

**<Cassette Deck Section> (H01, H02, H03, H06, F01, F02)**

1. **Enter the self-diagnostic mode, following the instructions described in [4.2. Entering Self-Diagnostic Mode].**
2. **Insert a normal-positioned music tape with erase prevention niches on both Sides A and B. Press [TAPE ◀ ▶ ] button to activate the TPS operation so that the tape automatically stops at an interval between music selections.**
3. **Press [● / II] and [◀ ▶] buttons together on the remote controller. (Recording does not start.)**
4. **Then, insert a Cr02-positioned blank cassette tape with an erase prevention niche of Side A or B set to the left side.**

5. Press [ / / FF] button. The tape will be forwarded and automatically stop after two seconds.
6. Remove the cassette tape, and set the other side.
7. Press [REW / / ] button. The tape will be rewound and automatically stops after two seconds.
8. Press [STOP ] button on the unit.
   If an error is found, a self-diagnostic key appears on the display.
   If several errors are found, the display shows these keys when [STOP ] button is pressed repeatedly. (Ex.: H01 - H02 - F01 - H01)
   If no error is found, only the message, “TEST” appears on the display.

(*1) TPS operation (music search) detects the blank sections between music selections. Therefore, do not use tapes with the following conditions:

- A blank section that lasts only 4 seconds or less.
- No blank sections (recording through microphones, etc.).
- Music selections that have extremely low pitches or prolonged silent sections (such as classical music).
- and/or Music recorded with fade in/out effect.

<CD Section> (H15, F15, F26)

1. Enter the self-diagnostic mode, following the instructions described in “4.2. Entering Self-Diagnostic Mode”.
2. Press [OPEN/CLOSE ] button to insert a CD.
3. Press [STOP ] button. If an error is found, a self-diagnostic key appears on the display.
   If several errors are found, the display shows these keys when [STOP ] button is pressed repeatedly. (Ex.: H15 - F15 - F26)
   If no error is found, only the message, "TEST" appears on the display.

<MD Section> (MD F15, MD F26, F22, F28, F29)

1. Enter the self-diagnostic mode, following the instructions described in “4.2. Entering Self-Diagnostic Mode”.

**2. Insert a MD (either record/playback or playback only type)**

**3. After TOC reading, press [MD ▶/⏸] button.**

**4. Press [STOP ■] button.**

**If an error is found, a self-diagnostic key appears on the display. If several errors are found, the display shows these keys when [STOP ■] button is pressed repeatedly. (Ex.: MD F15 - MD F26 - F22).**

**If no error is found, only the message, "TEST" appears on the display.**

| Displayed Key | Symptoms | Causes and Troubleshooting |
|---|---|---|
| H01 | Cassette mechanism operates erratically. Ex.: REV operation starts even when "FWD" button is pressed. | Malfunction of cassette mechanism mode switch (S971), plunger, and capstan motor. (Check and replace the parts.) |
| H02 | Recording fails or starts when an erase prevention tab on cassette tape is broken off. | Malfunction or short-circuit of erase prevention detect switch (S974, S975). (Check and replace the parts.) |
| H03 | No playback when "TAPE ◄►" button is pressed. The motor operates when no cassette tape is inserted and "TAPE ◄►" button is pressed. | Malfunction or short-circuit of cassette mechanism tape detect switch (S972). (Check and replace the parts.) |
| H06 | Excessive hum during Cr02-tape playback. | Malfunction of chrome tape detect switch (S973). (Check and replace the parts.) |
| H15 | CD tray opens and automatically closes. | Malfunction of CD tray open detect switch (S790). (Check and replace the parts.) |
| F01 | Tape playbacks and stops soon after "TAPE ◄►" button is pressed. | Reel pulse problem. Malfunction of photo interrupter (IC971). (Check and replace the parts.) |
| F02 | TPS does not operate. | Malfunction of playback EQ/recording amplifier IC (IC1302). (Check and replace the parts.) |
| F15 MD F15 | Playback does not start quickly (it takes about 8 seconds) when "CD ▶/⏸" or "MD ▶/⏸" button is pressed during the power-off mode or other modes than CD and MD functions. | Faulty contact of rest (most inner detect) switch (S701) at optical pickup. (Check and replace the parts.) Dislocation of optical pickup. (Check and adjust.) |
| F22 | MD cannot be inserted. | Malfunction of MD loading motor or a MD loading mechanism system. (Check and replace the parts.) |
| F26 MD F26 | Playback does not start when MD or CD is inserted. | Malfunction of servo amplifier (IC701), CD servo processor IC (IC702), or MD servo processor IC (IC3). (Check and replace the parts.) Dislocation or snapping of MD/CD flexible board. (Check and repair.) |
| F28 | MD cannot be inserted. | Check that a disc is not stuck. Disconnection or snapping (of flexible board or connector cable) between MD unit and MD servo board. (Check and replace the parts.) Malfunction of MD unit. (Check and repair.) |
| F29 | MD is not ejected. | Check that a disc is not stuck. Disconnection or snapping (of flexible board or connector cable) between MD unit and MD servo board. (Check and replace the parts.) Malfunction of MD unit. (Check and repair.) |
| F76 (Automatically displayed) | The power is automatically switched off immediately after turned on. | Malfunction of power amplifier IC (IC901 or IC902). (Direct current voltage is generated at the speaker terminal.) Malfunction of power circuit system. (Check and repair.) |

# 5. Caution for AC Mains Lead

**(For "EB" area code model only.)**

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

**CAUTION!**
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OFF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

**IMPORTANT**
The wires in this mains lead are coloured in accordance with the following code:

| | |
|---|---|
| Blue: | Neutral |
| Brown: | Live |

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

**WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.**

**THIS PLUG IS NOT WATERPROOF—KEEP DRY.**

**Before use**
Remove the connector cover.

**How to replace the fuse**
The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

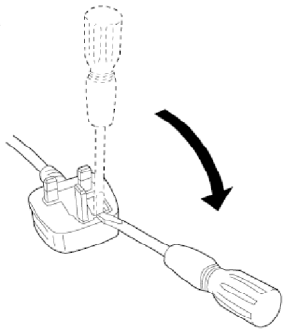
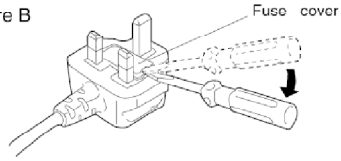


Figure B




2. Replace the fuse and close or attach the fuse cover.

Figure A

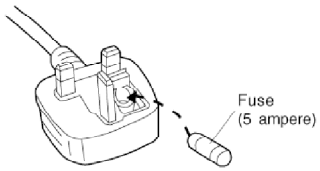
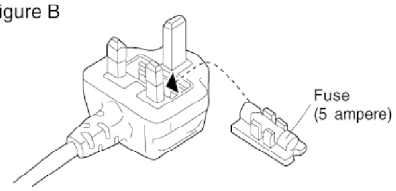
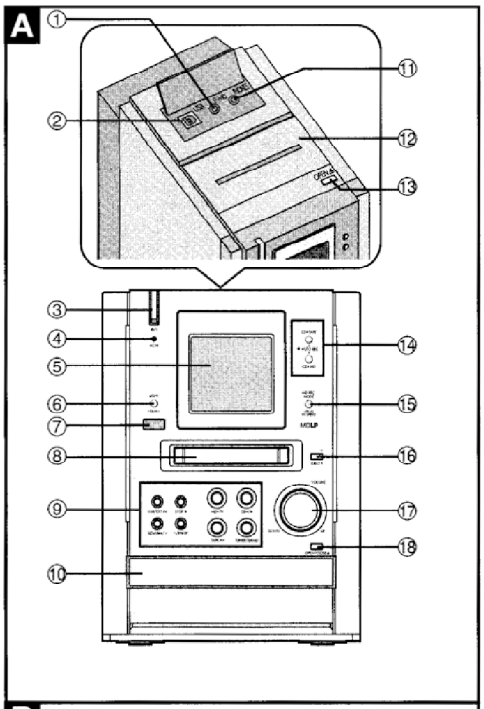



Figure B




# 6. Operation Procedures




**A Main unit**

① P-MD terminal (P-MD)
② USB terminal (USB)
③ Standby/on switch (⏻/I)
Press to switch the unit from on to standby mode or vice versa.
In standby mode, the unit is still consuming a small amount of power.
④ AC supply indicator (AC IN)
This indicator lights when the unit is connected to the AC mains supply.
⑤ Display
⑥ Display and light mode/demonstration button (LIGHT –DEMO)
⑦ Remote control signal sensor
⑧ MD slot
⑨ Main operating buttons
⑩ CD tray
⑪ Headphone jack (PHONES)
⑫ Cassette holder
⑬ Cassette holder open button (OPEN ⏏)
⑭ Auto record buttons (● AUTO REC, CD ▶ MD, CD ▶ TAPE)
⑮ SP/LP2/LP4 recording mode select/high-speed recording mode button (MD REC MODE –DUAL HI-SPEED)
⑯ MD eject button (EJECT ⏏)
⑰ Volume control (VOLUME)
⑱ CD tray open/close button (OPEN/CLOSE ⏏)

**B Remote control**

⑲ Sleep/auto off button (SLEEP –AUTO OFF)
⑳ Standby/on button (⏻)
㉑ Character select button (CHARA)
㉒ Title edit button (TITLE)
㉓ Numbered, text buttons
㉔ Main operating buttons
㉕ SP/LP2/LP4 recording mode select button (MD REC MODE)
㉖ Sound quality buttons (SOUND and THEATER S.)
㉗ Volume buttons (–, + VOLUME)
㉘ Clock/timer button (CLOCK/TIMER)
㉙ Play/record timer button (⏲ PLAY/⏲ REC)
㉚ Enter button (ENTER)
㉛ Display select button (DISPLAY)
㉜ Edit mode button (EDIT MODE)
㉝ Delete button (DELETE)
㉞ Play mode button (PLAY MODE)
㉟ Program button (PROGRAM)
㊱ Muting button (MUTING)

# 7. Handling Precautions For Traverse Deck (CD/MD)

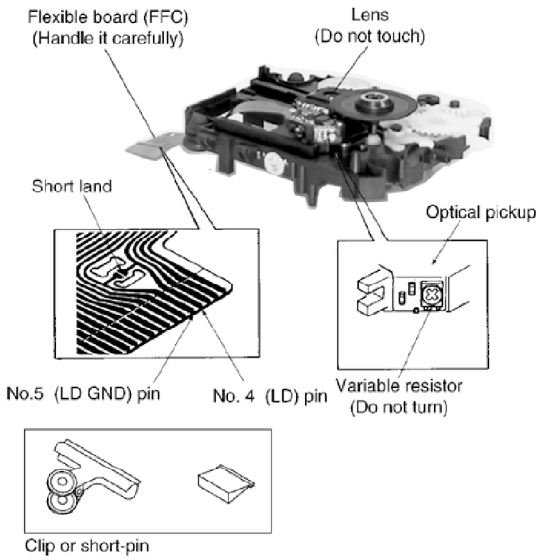
**The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.**
**So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).**

● **Handling of CD traverse deck (optical pickup)**

## 1. Do not subject the traverse deck (optical pickup) to static

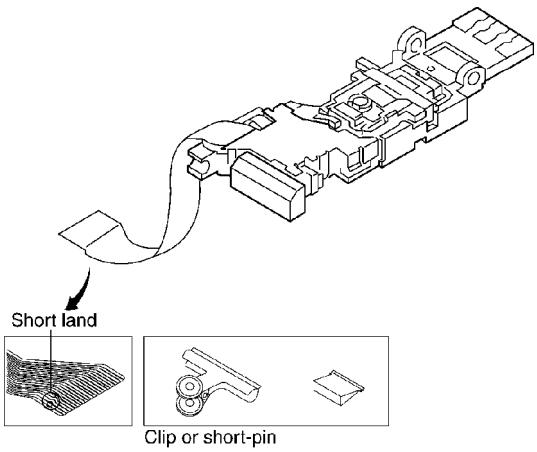
**electricity as it is extremely sensitive to electrical shock.**

2. **The short land between the No. 4 (LD) and No. 5 (GND) pins on the flexible board (FFC) is shorted with a solder build-up to prevent damage to the laser diode.**
3. **Take care not to apply excessive stress to the flexible board (FPC board).**
4. **Do not turn the variable resistor (laser power adjustment). It has already been adjusted.**




● **Handling of MD Unit (optical pickup)**

1. **Do not subject the MD unit (optical pickup) to static electricity as it is extremely sensitive to electrical shock.**
2. **The short land between the No. 25 (LD-GND) and No. 24 (LD) pins on the flexible board is shorted with a solder build-up to prevent damage to the laser diode.**
3. **Take care not to apply excessive stress to the flexible board (FFC).**
4. **Do not turn the variable resistor (laser power adjustment). It has already been adjusted.**



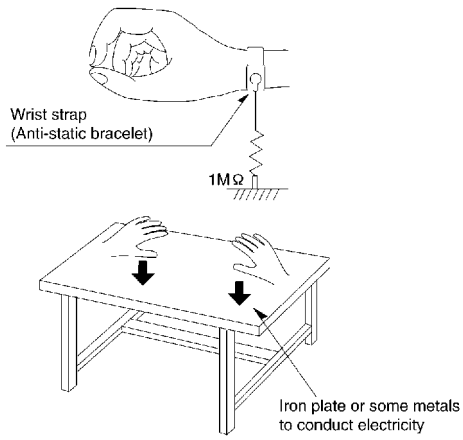

● **Grounding for electrostatic breakdown prevention**

**1. Human body grounding**
**Use the anti-static wrist strap to discharge the static electricity from your body.**

**2. Work table grounding**
**Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.**

**Caution :**

**The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).**




**Caution when Replacing the Optical Pickup :**

**The traverse has a short point shorted with solder to protect the laser diode against electrostatics breakdown. Be sure to remove the**

**solder from the short point before making connections.**

# 8. Precaution of Laser Diode

**Caution :**

**This product utilizes a laser diode with the unit turned "ON", invisible laser radiation is emitted from the pick up lens. / Wavelength : 780 nm / Maximum output radiation power from pick up : 100 μ W/VDE / Laser radiation from pick up unit is safety level, but take note of the following:**

1. **Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.**
2. **Do not adjust the variable resistor on the pick up unit. It is already adjusted.**
3. **Do not look at the focus lens by using optical instruments.**
4. **Do not stare at the pick up lens for a long time.**

**ACHTUNG :**

**Dieses Produkt enthält eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt. / Wellenlänge : 780nm / Maximale Strahlungsleistung der Lasereinheit :100 μ W/VDE / Die Strahlung an der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:**

1. **Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.**
2. **Den werkseitig justierten Einstellregler der Lasereinhit nicht verstellen.**
3. **Nicht mit optischen Instrumenten in die Fokussierlinse blicken.**
4. **Nicht über längere Zeit in die Fokussierlinse blicken.**

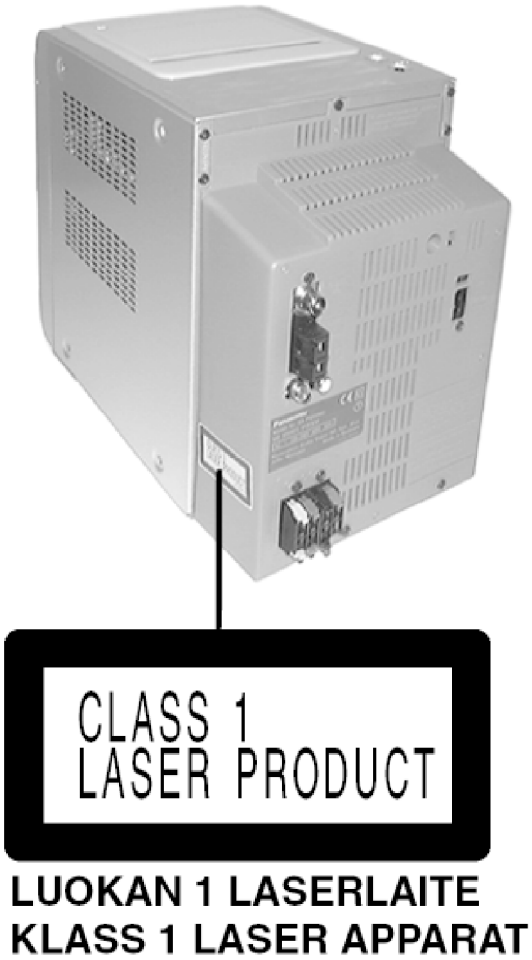
**ADVARSEL :**

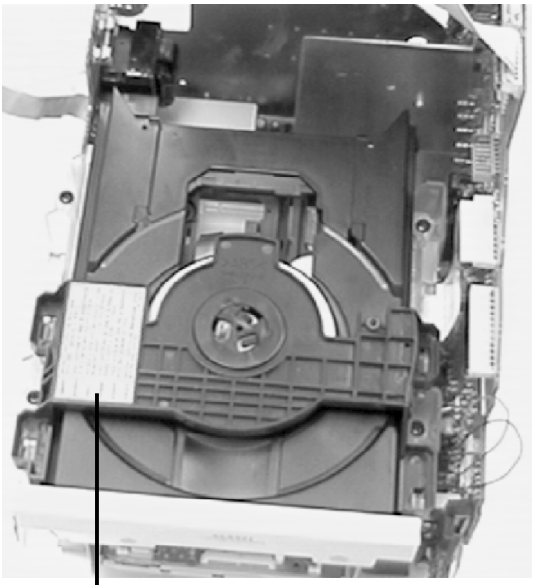
**I dette a apparat anvendes laser.**

**CAUTION!**

**THIS PRODUCT UTILIZES A LASER.**
**USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THC SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.**

■ **Use of Caution Labels**





| | |
|---|---|
| DANGER | INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. |
| ADVARSEL | USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING. |
| VARO! | AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN. |
| VARNING | OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN. |
| ADVARSEL | USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN. |
| VORSICHT | UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN. |

# 9. Disassembly and Main Component Replacement Procedures before Operation Checks

**“ATTENTION SERVICER”**
**Some chassis components may have sharp edges. Be careful when dissassembling and servicing.**

1. **This section describes procedures for checking the operation of the major circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**

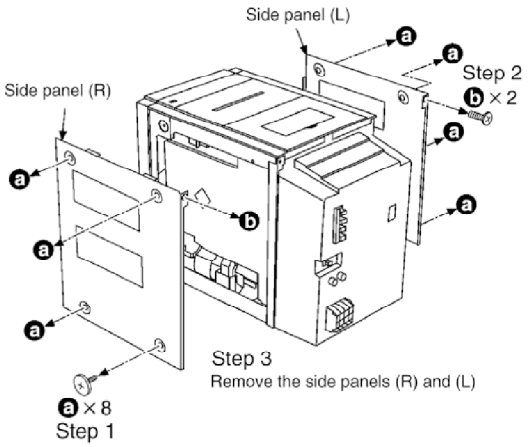
**Warning :**
**This product uses a laser diode. Refer to caution statement Precaution of Laser Diode.**

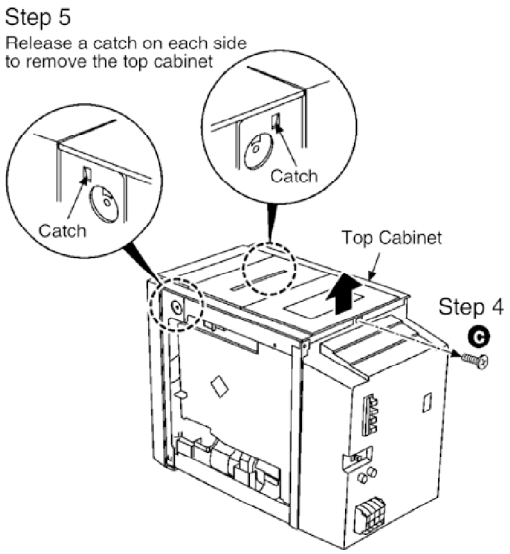
**ACHTUNG :**

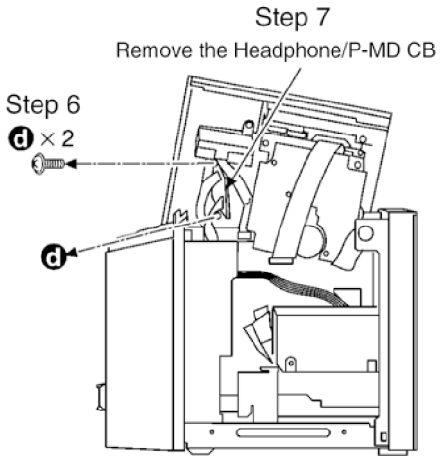
**- Die Lasereinheit nicht zerlegen.**

**- Die Lasereinheit darf nur gegen eine vom Hertsteller spezifizierte Einheit ausgetauscht werden.**

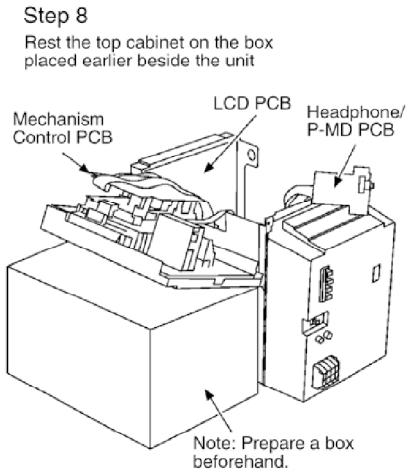
## 9.1. Procedure for Checking Mechanism Control PCB, LCD PCB, Headphone/P-MD PCB, and USB PCB

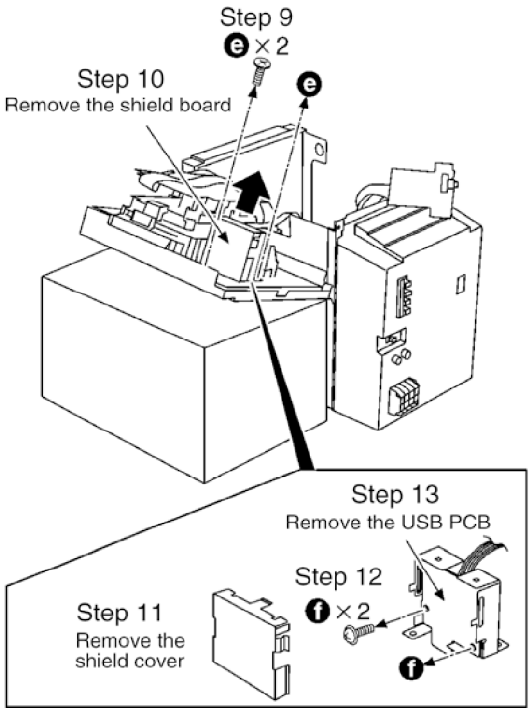


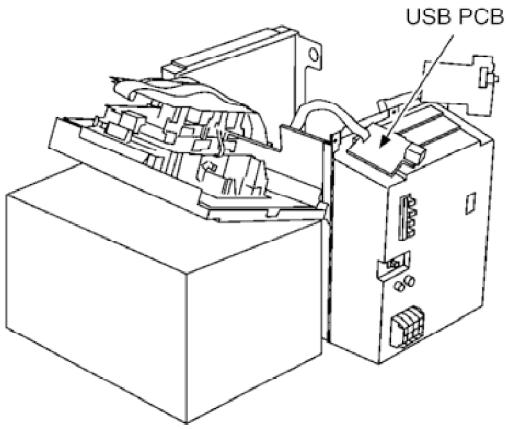



**- Check the Mechanism Control PCB, LCD PCB, and Headphone/P-MD PCB when the unit is disassembled as shown in the figure below.**


Step 8
Rest the top cabinet on the box placed earlier beside the unit
LCD PCB
Mechanism Control PCB
Headphone/ P-MD PCB
Note: Prepare a box beforehand.

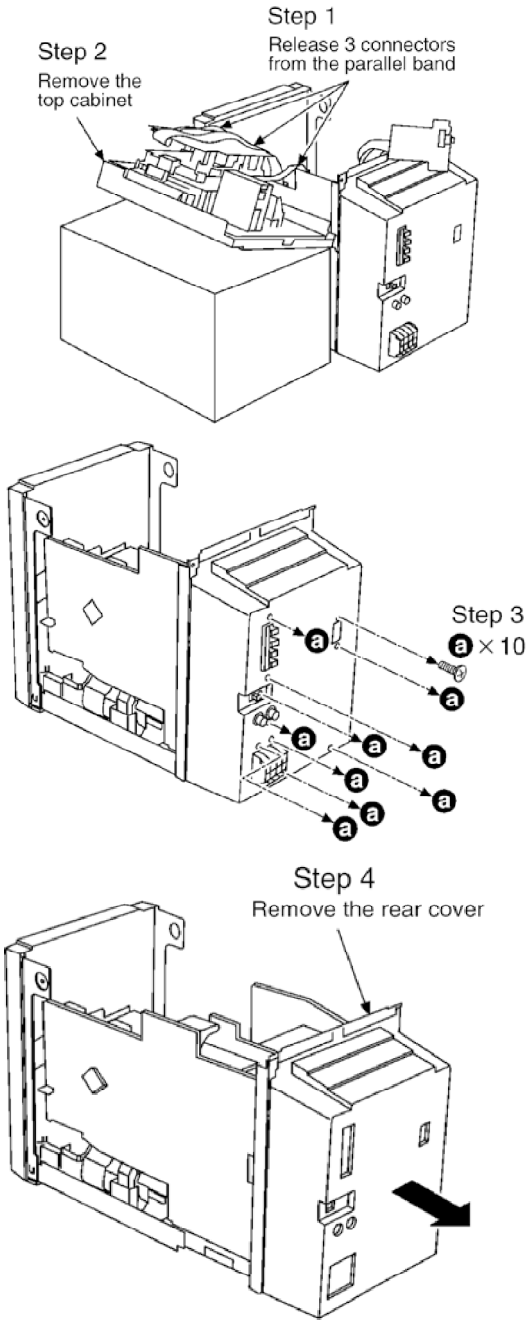



**- Check the USB PCB when the unit is disassembled as shown in the figure below.**

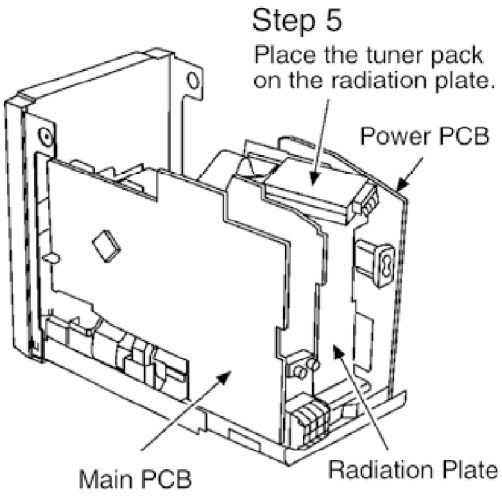



## 9.2. Procedure for Checking Main PCB and Power PCB

**- Follow Steps 1 to 8 described in Item 9.1.**



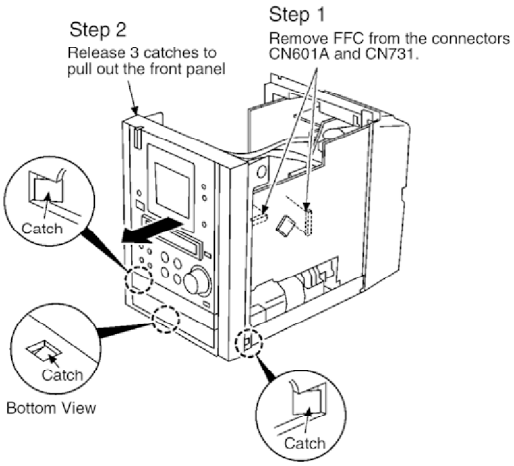

**- Check the Main PCB and Power PCB when the unit is disassembled as shown in the figure below.**

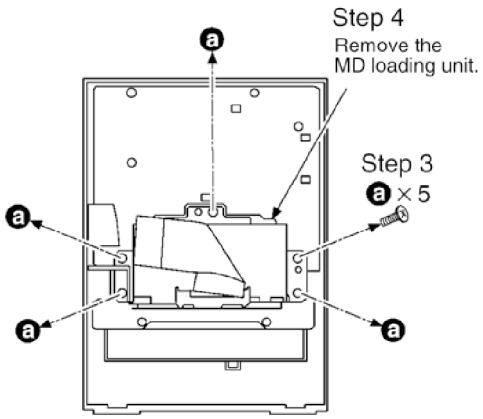


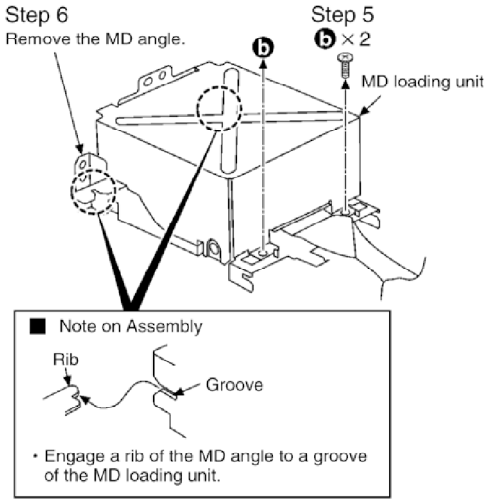

## 9.3. Procedure for Checking MD Servo PCB

**- Follow Steps 1 to 8 described in Item 9.1.**

**- Follow Steps 1 and 2 described in Item 9.2.**

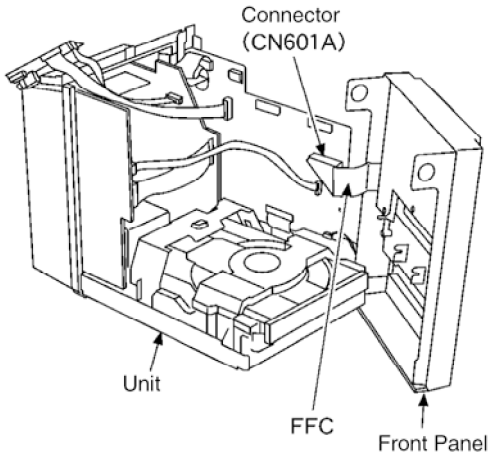





Step 7

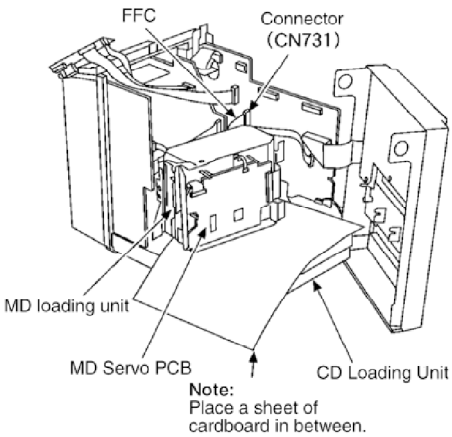
Place the front panel on the right side of the unit, and attach FFC to the connector CN601A.

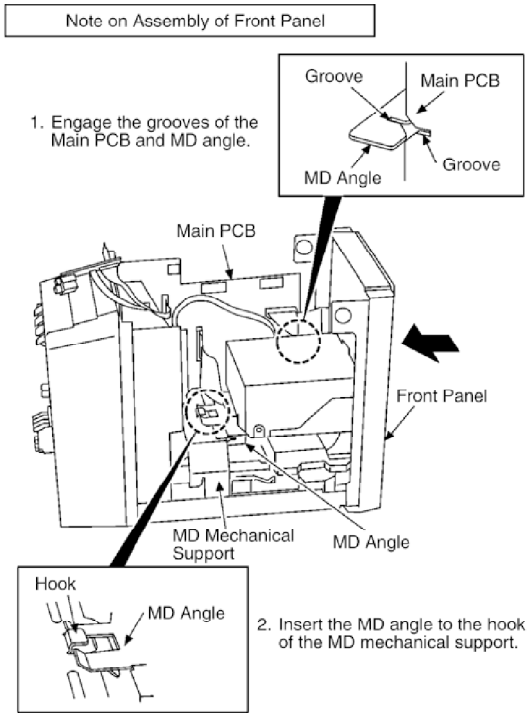



**- Check the MD Servo PCB when the unit is disassembled as shown in the figure below.**

Step 8

Place the MD loading unit on the CD loading unit, and attach FFC to the connector CN731.



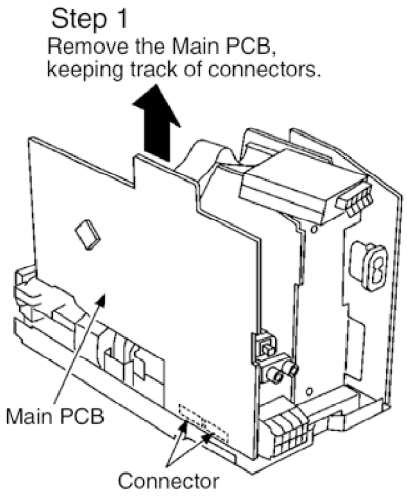


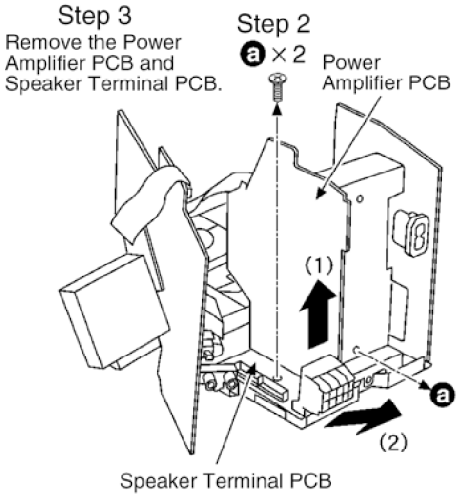

## 9.4. Procedure for Checking Power PCB and CD Servo PCB

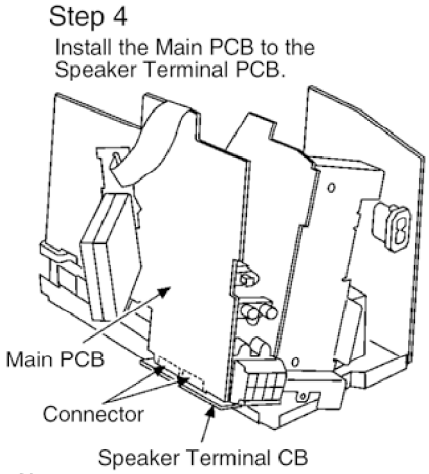
**- Follow Steps 1 to 8 described in Item 9.1.**

**- Follow Steps 1 to 5 described in Item 9.2.**

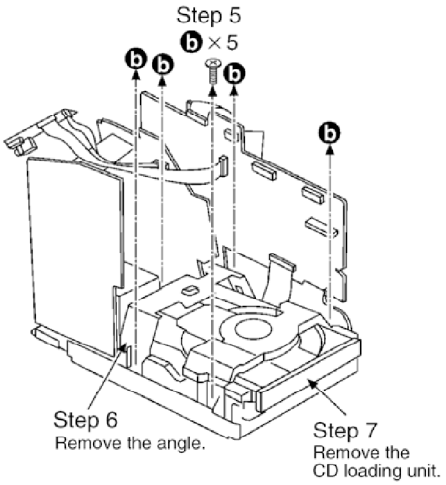
**- Follow Steps 1 to 4 described in Item 9.3.**

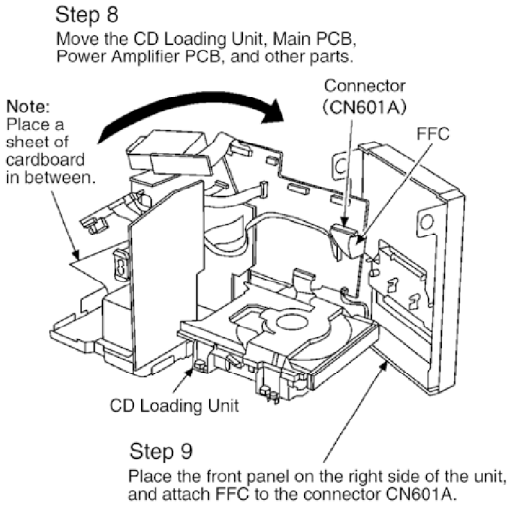




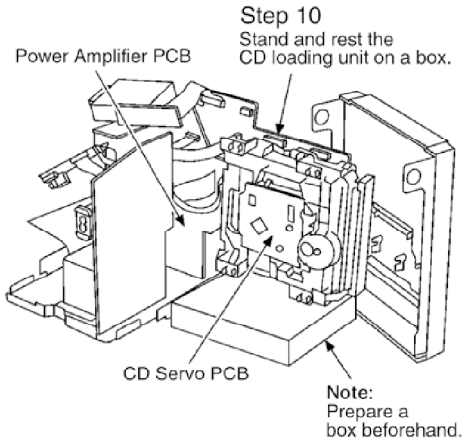




**Note:**
Be sure that the connectors are firmly attached.




Step 8
Move the CD Loading Unit, Main PCB, Power Amplifier PCB, and other parts.
Note:
Place a sheet of cardboard in between.
Connector (CN601A)
FFC
CD Loading Unit
Step 9
Place the front panel on the right side of the unit, and attach FFC to the connector CN601A.

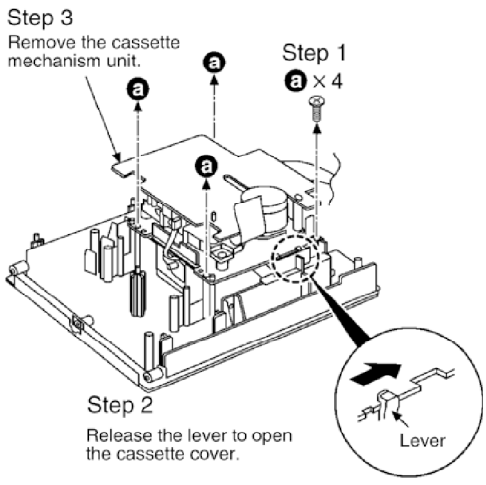
**- Check the Power Amplifier PCB and CD Servo PCB when the unit is disassembled as shown in the figure below.**

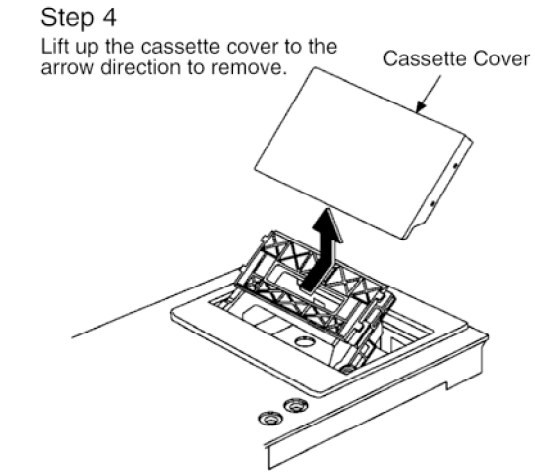


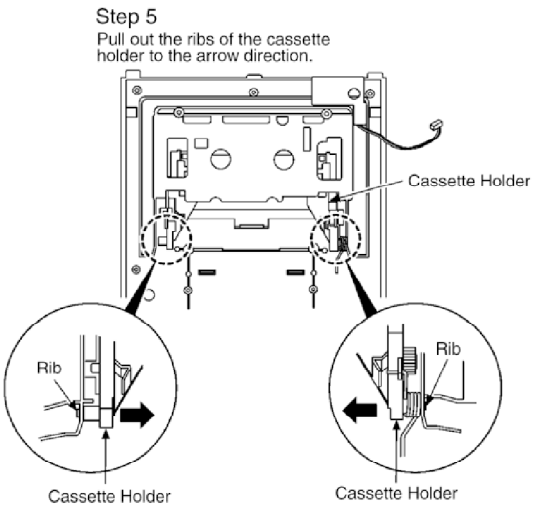

## 9.5. Procedure for Replacing Cassette Holder

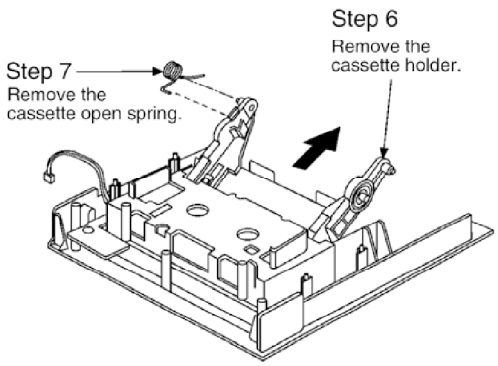
**- Follow Steps 1 to 8 described in Item 9.1.**

**- Follow Steps 1 and 2 described in Item 9.2.**



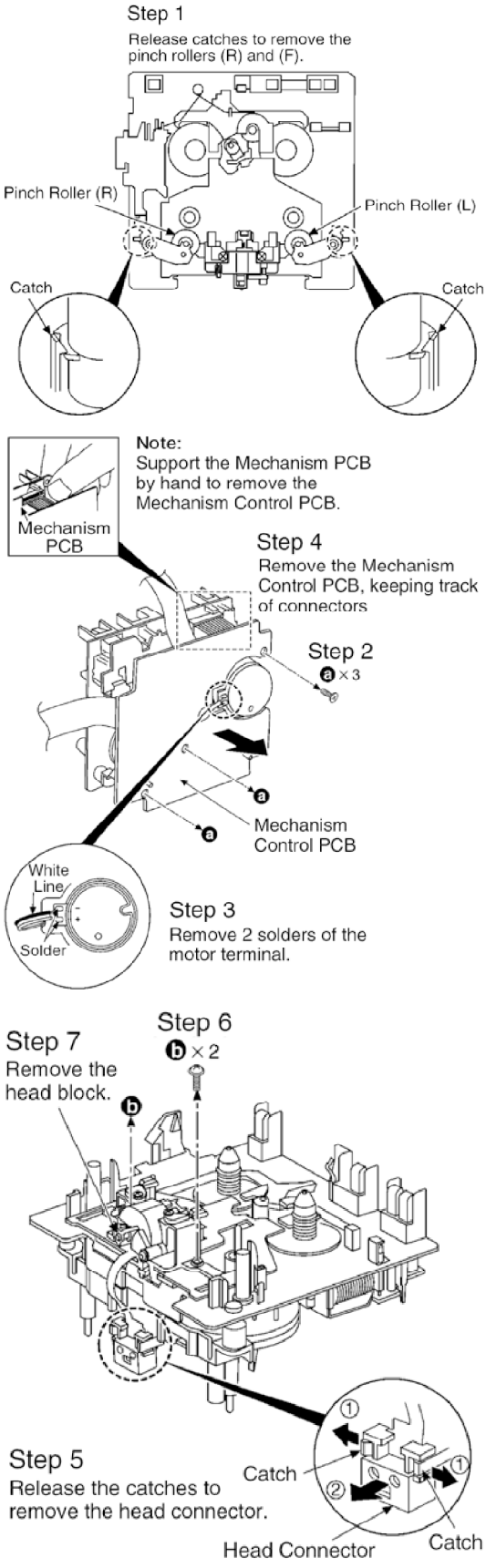


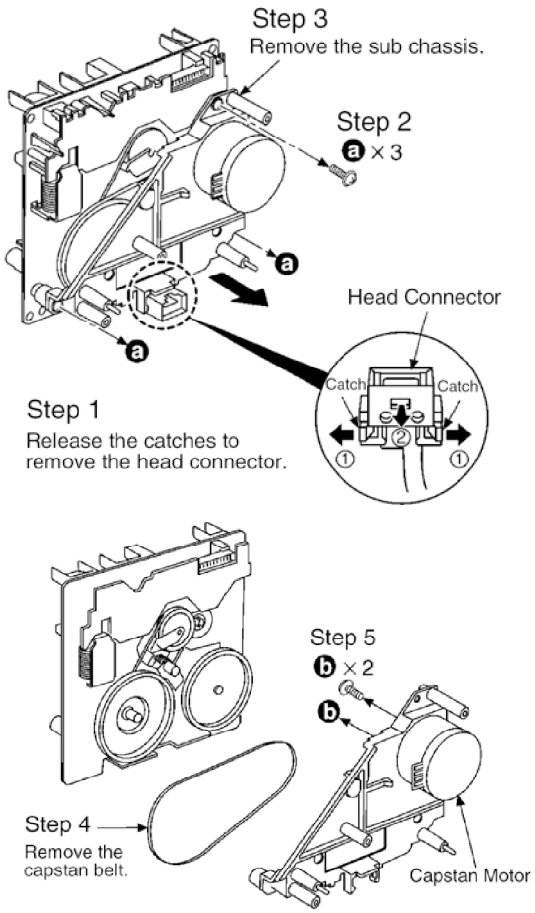

## 9.6. Procedure for Replacing Pinch Roller and Head Block (Cassette Mechanism Unit)

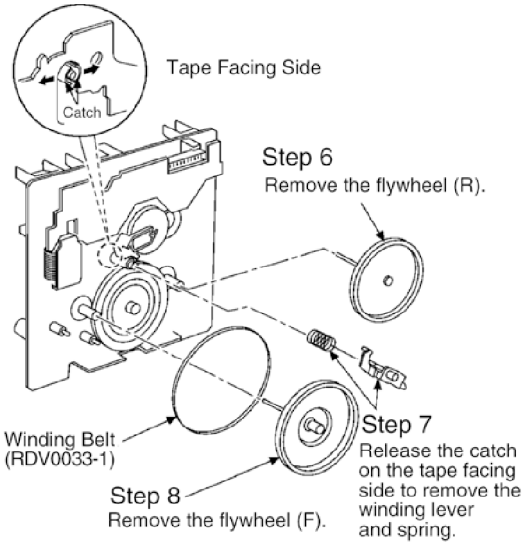
**- Follow Steps 1 to 8 described in Item 9.1.**
**- Follow Steps 1 and 2 described in Item 9.2.**
**- Follow Steps 1 to 4 described in Item 9.5.**

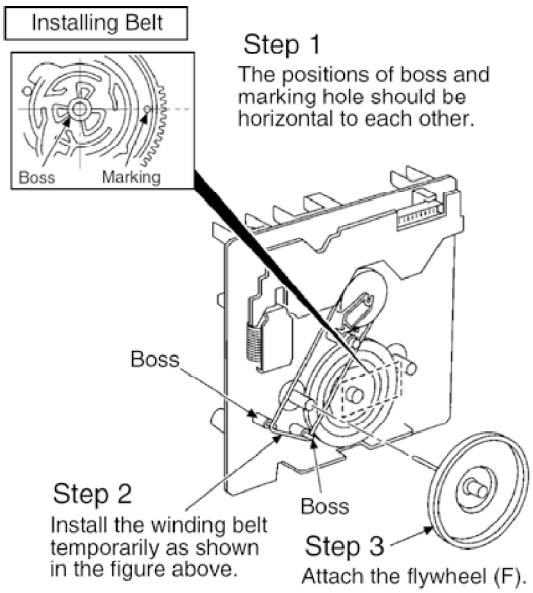

Step 1
Release catches to remove the pinch rollers (R) and (F).
Pinch Roller (R)
Pinch Roller (L)
Catch
Catch
Note:
Support the Mechanism PCB by hand to remove the Mechanism Control PCB.
Mechanism PCB
Step 4
Remove the Mechanism Control PCB, keeping track of connectors
Step 2
a ×3
a
a
Mechanism Control PCB
White Line
Solder
Step 3
Remove 2 solders of the motor terminal.
Step 6
b ×2
Step 7
Remove the head block.
b
Step 5
Release the catches to remove the head connector.
Catch
Head Connector
Catch

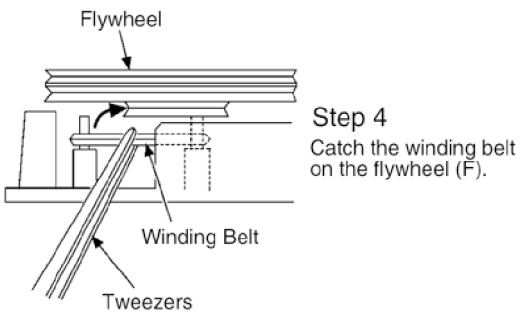
## 9.7. Procedure for Replacing Motor, Capstan Belt A, Capstan Belt B, and Winding Belt (Cassette Mechanism Unit)

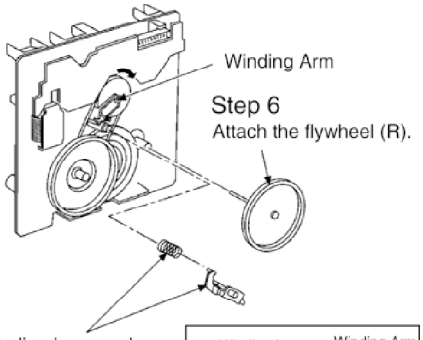
**- Follow Steps 1 to 8 described in Item 9.1.**
**- Follow Steps 1 and 2 described in Item 9.2.**
**- Follow Steps 1 to 4 described in Item 9.5.**
**- Follow Steps 1 to 4 described in Item 9.6.**




Tape Facing Side
Catch
Step 6
Remove the flywheel (R).
Winding Belt
(RDV0033-1)
Step 7
Release the catch on the tape facing side to remove the winding lever and spring.
Step 8
Remove the flywheel (F).


Installing Belt
Step 1
The positions of boss and marking hole should be horizontal to each other.
Boss
Marking
Boss
Boss
Step 2
Install the winding belt temporarily as shown in the figure above.
Step 3
Attach the flywheel (F).

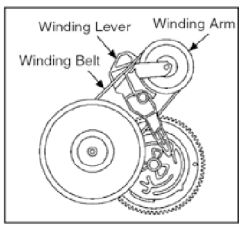

Flywheel
Step 4
Catch the winding belt on the flywheel (F).
Winding Belt
Tweezers



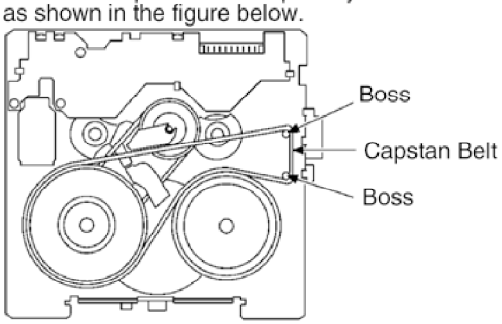

Step 6
Attach the flywheel (R).

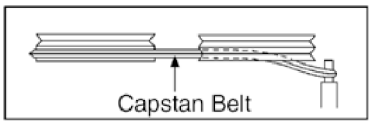
Step 5
Install the winding lever and spring while the winding arm is pressed to the arrow direction. (Be sure that the winding lever is firmly inserted and the catch is hooked.)

Note:
The winding lever should be positioned as shown in the right figure.



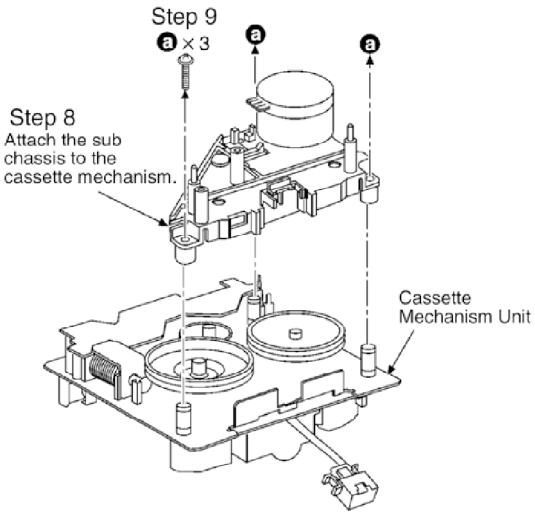

Step 7
Install the capstan belt temporarily as shown in the figure below.

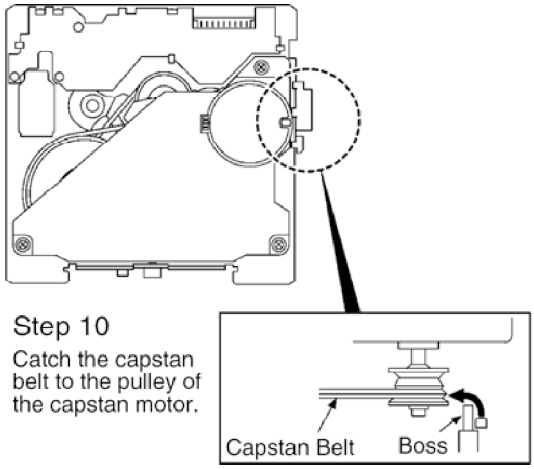



Side View

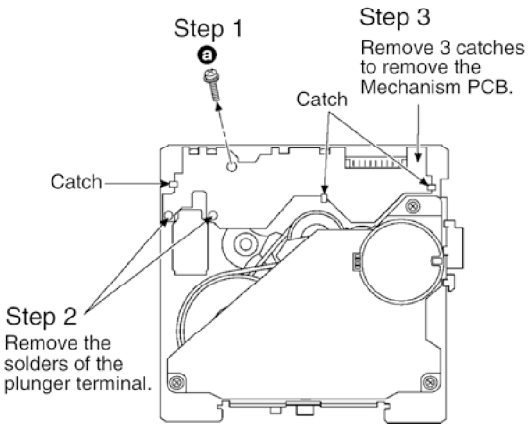
Note:
Keep the belt away from grease.





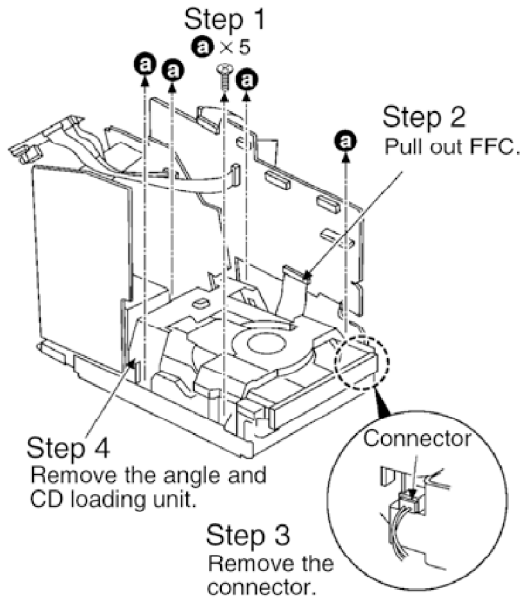

## 9.8. Procedure for Replacing Parts on Mechanism PCB

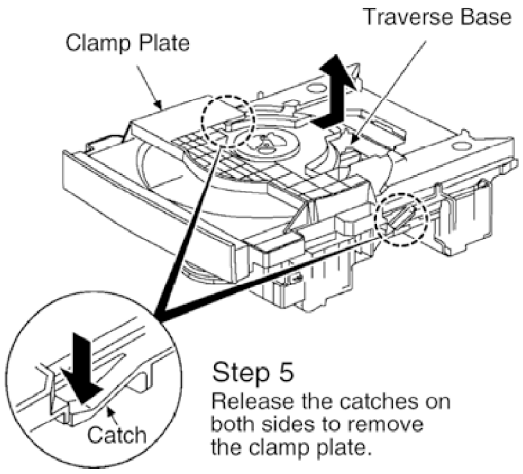
**- Follow Steps 1 to 8 described in Item 9.1.**
**- Follow Steps 1 and 2 described in Item 9.2.**
**- Follow Steps 1 to 4 described in Item 9.5.**
**- Follow Steps 1 to 4 described in Item 9.6.**



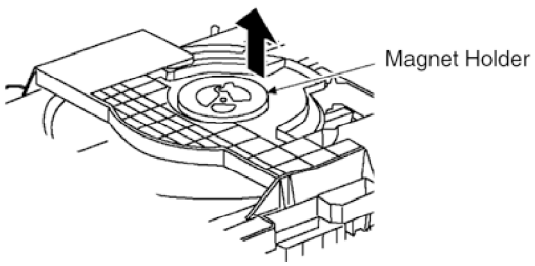

## 9.9. Procedure of Replacing Traverse Base (JUN), Driving Gear, and Cam Gear (CD Mechanism Unit)

**- Follow Steps 1 to 8 described in Item 9.1.**
**- Follow Steps 1 to 5 described in Item 9.2.**
**- Follow Steps 1 to 3 described in Item 9.3.**
**- Follow Steps 1 to 3 described in Item 9.4.**



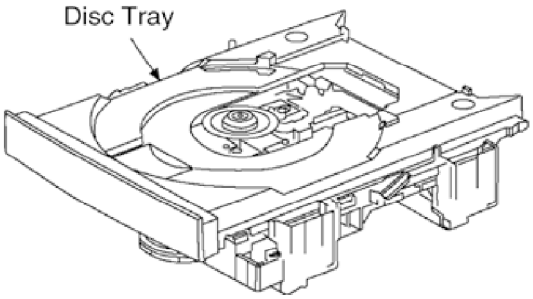




Note:
When the magnet attracts the traverse base (JUN) that is set to UP, lift the magnet holder backward to remove the clamp plate.



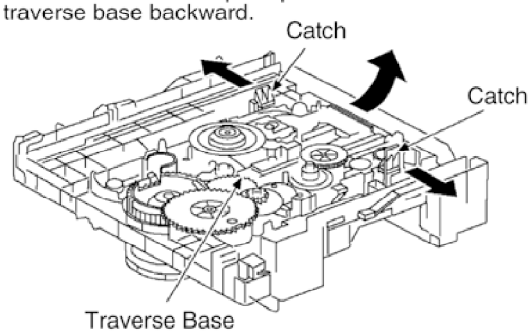
## Step 6

Remove the disc tray upward.



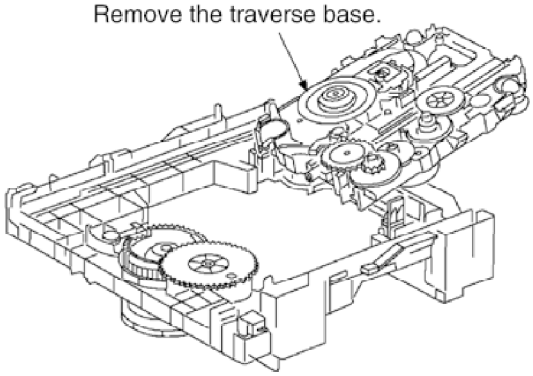

## Step 7

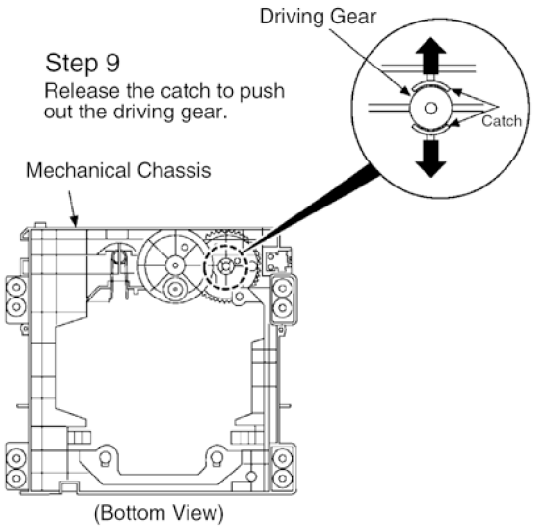
Release 2 catches to pull up the traverse base backward.

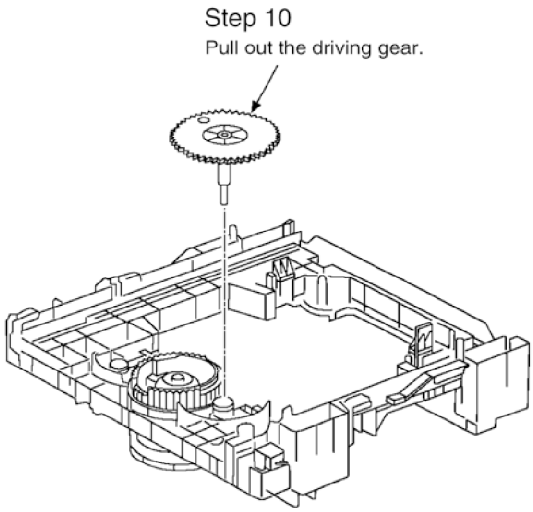


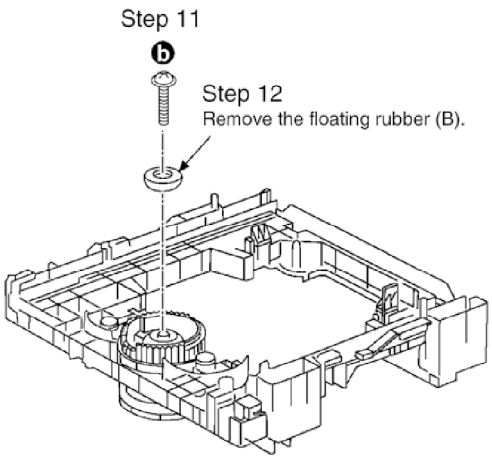

## Step 8

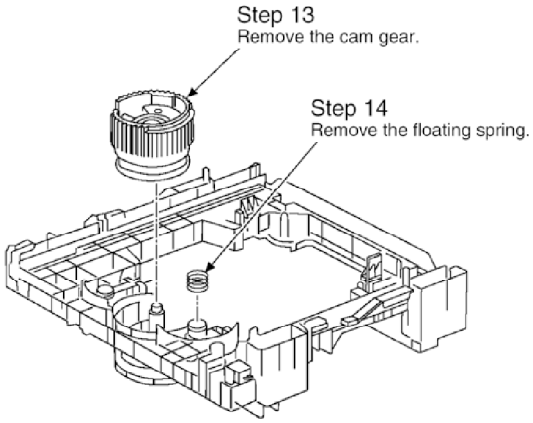
Remove the traverse base.




Driving Gear
Step 9
Release the catch to push out the driving gear.
Catch
Mechanical Chassis
(Bottom View)

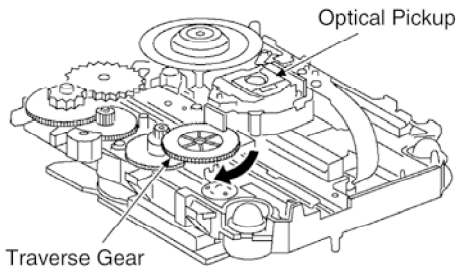

Step 10
Pull out the driving gear.

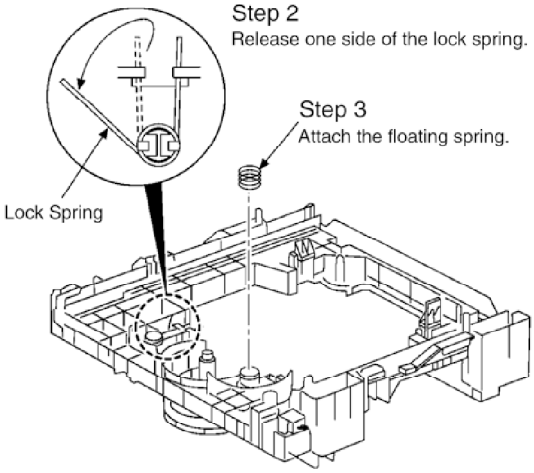

Step 11
b
Step 12
Remove the floating rubber (B).




## Assembly of Traverse Base, Cam Gear, Driving Gear, Disc Tray, and Clam Plate

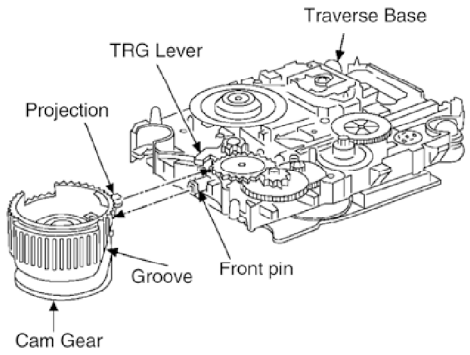
**Step 1**
Turn the traverse gear (B) to the arrow direction, and move the optical pickup to the center.



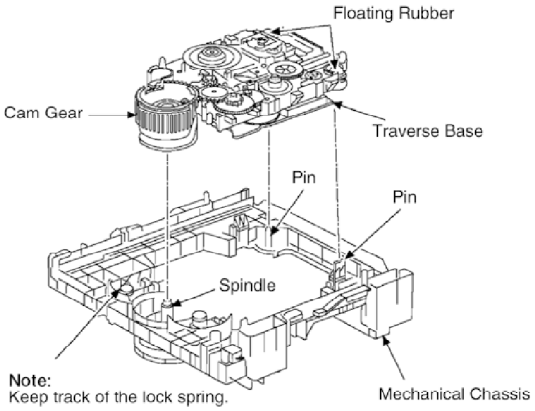
Step 4

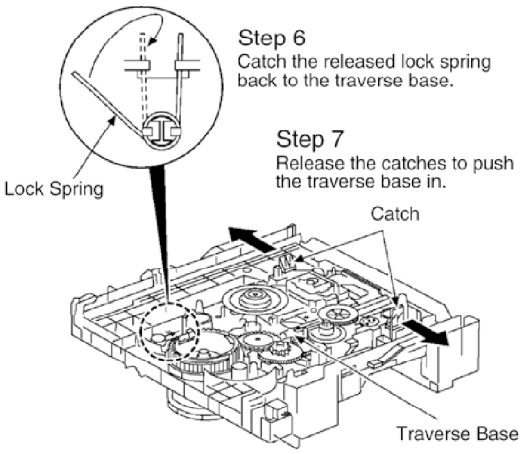
Engage the front pin of the traverse gear to the groove of the cam gear and the projection of the cam gear between the TRG lever.
(so that the gear is automatically engaged)

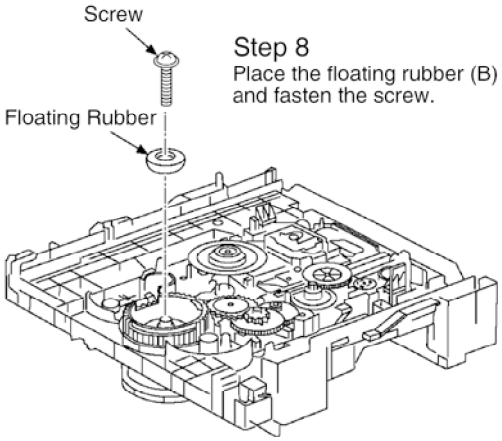



Step 5

Hold the assembled part carefully. Engage the cam gear to the spindle of the mechanical chassis and the floating rubber of the traverse base to the pin of the mechanical chassis.

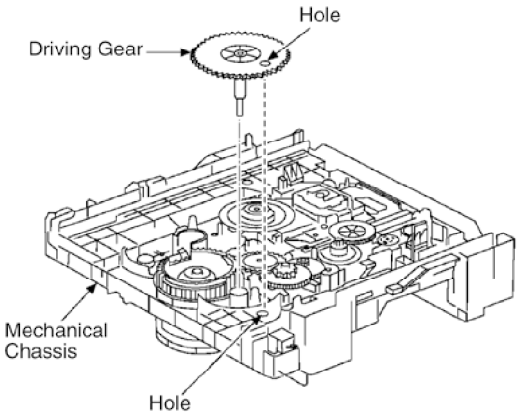




Step 6
Catch the released lock spring back to the traverse base.
Step 7
Release the catches to push the traverse base in.
Lock Spring
Catch
Traverse Base

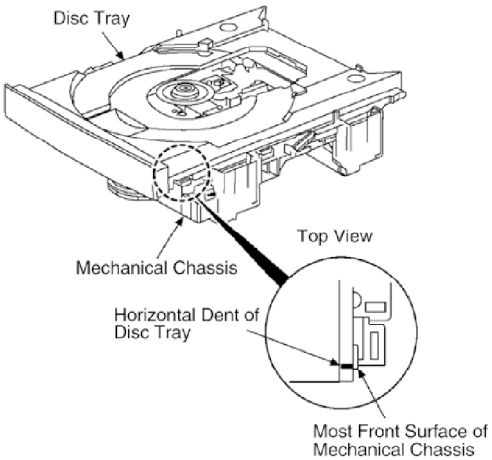


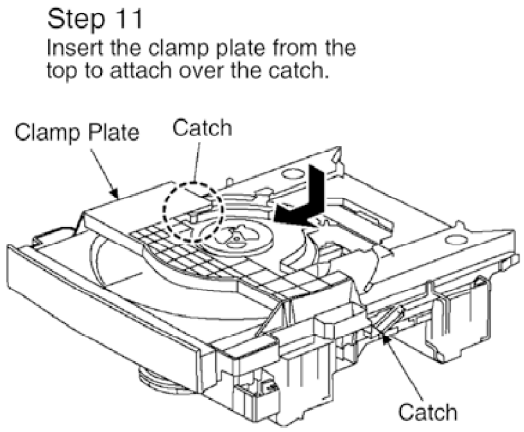

**Step 8**
Place the floating rubber (B) and fasten the screw.

**Step 9**
Put together the holes located on the driving gear and the mechanical chassis, and push down the driving gear till a click sound is heard.



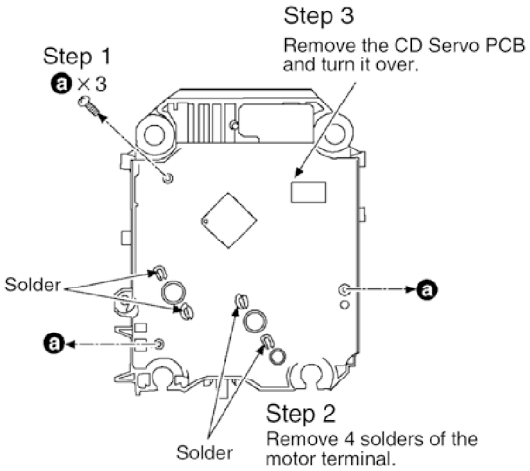

**Step 10**
Position the disc tray where the horizontal dent located in the most right exterior of the disc tray is attached to the front surface located in the right most exterior of the mechanical chassis.





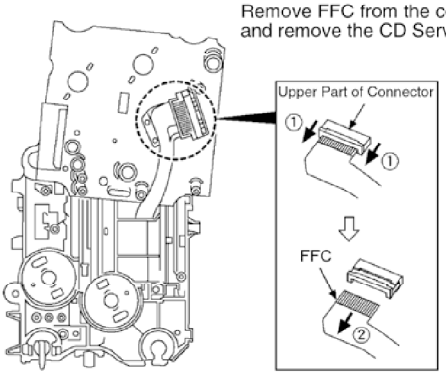

## 9.10. Procedure for Replacing Optical Pickup (CD Mechanism Unit)

**- Follow Steps 1 to 8 described in Item 9.1.**
**- Follow Steps 1 to 5 described in Item 9.2.**
**- Follow Steps 1 to 3 described in Item 9.3.**
**- Follow Steps 1 to 3 described in Item 9.4.**
**- Follow Steps 8 to 9 described in Item 9.9.**

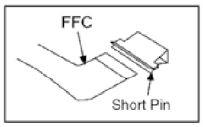


Step 4

Remove FFC from the connector, and remove the CD Servo PCB.

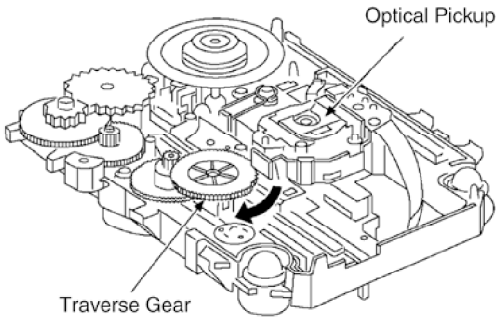



Note:
Insert the short pin to FFC of the optical pickup.
(Refer to "Note on Handling Optical Pickup".)

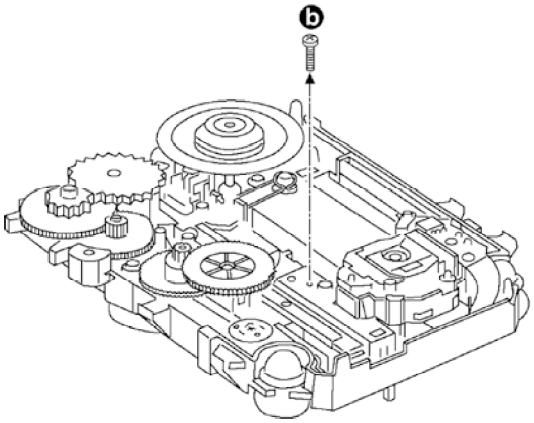


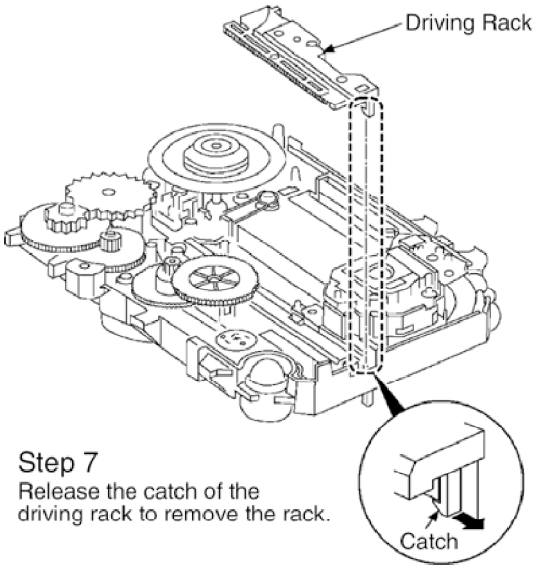

Step 5

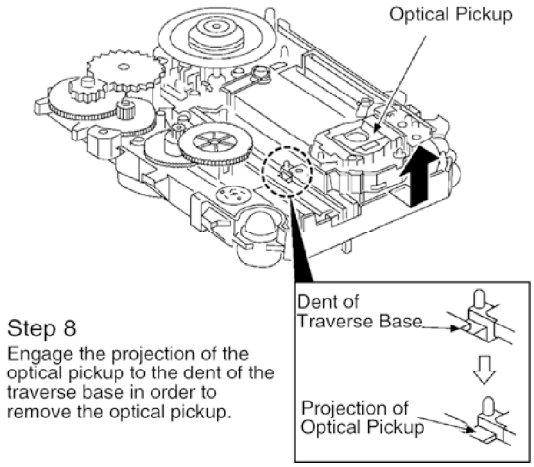
Turn the traverse gear (B) to the arrow direction, and move the optical pickup to the most outer side.

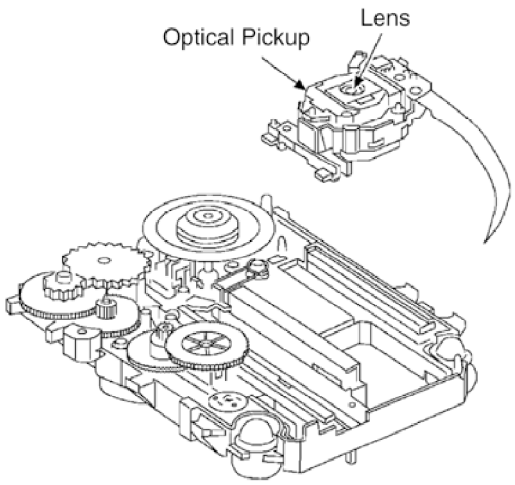



Step 6







Optical Pickup
Step 8
Engage the projection of the optical pickup to the dent of the traverse base in order to remove the optical pickup.
Dent of Traverse Base
Projection of Optical Pickup

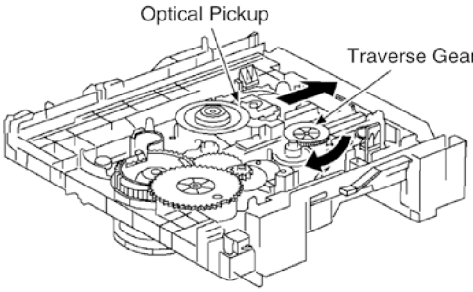



Note:
Do not touch the optical pickup lens.

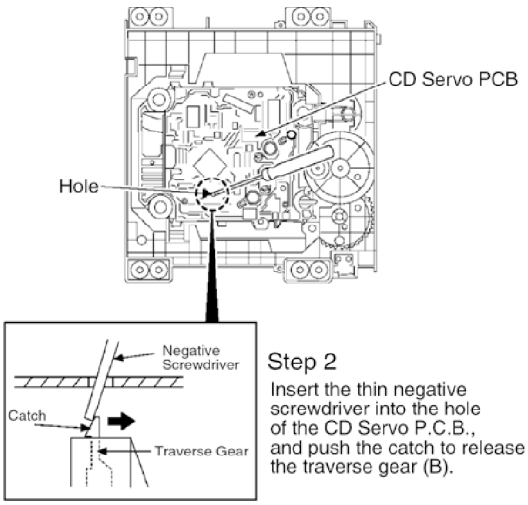
## 9.11. Procedure for Replacement Traverse Gear A and Traverse Gear B (CD Mechanism Unit)

**- Follow Steps 1 to 8 described in Item 9.1.**

**- Follow Steps 1 to 5 described in Item 9.2.**
**- Follow Steps 1 to 3 described in Item 9.3.**
**- Follow Steps 1 to 3 described in Item 9.4.**
**- Follow Steps 1 to 6 described in Item 9.9.**



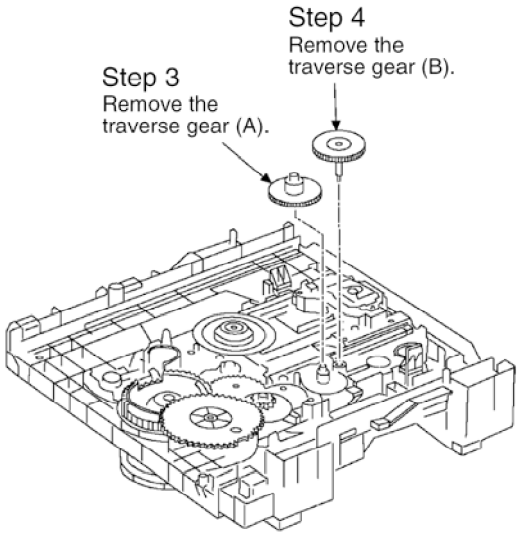

Step 1
Turn the traverse gear to the arrow direction, and move the optical pickup to the most outer side.




Step 2
Insert the thin negative screwdriver into the hole of the CD Servo P.C.B., and push the catch to release the traverse gear (B).

Step 3
Remove the traverse gear (A).

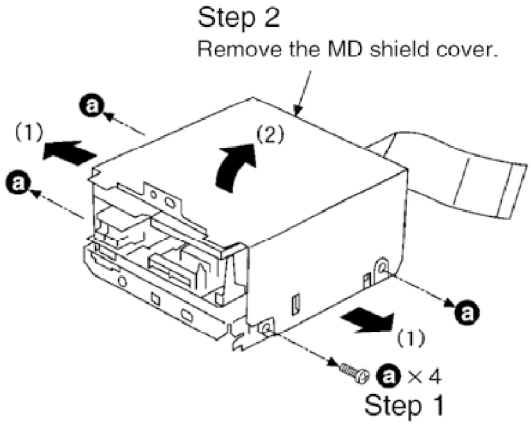
Step 4
Remove the traverse gear (B).

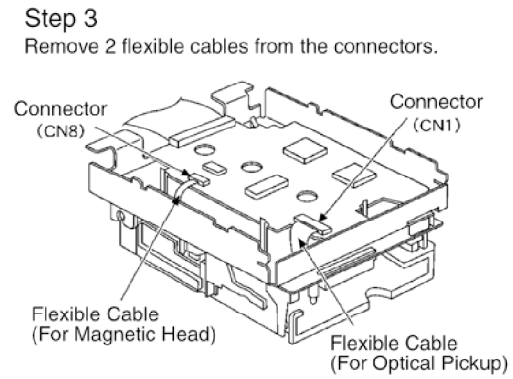


Note:
Do not use the once removed traverse gear (B), and be sure to replace with a new gear.

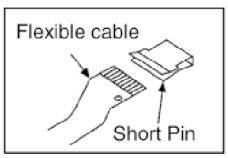
## 9.12. Procedure for Replacing Magnetic Head and Optical Pickup (MD Mechanism Unit)

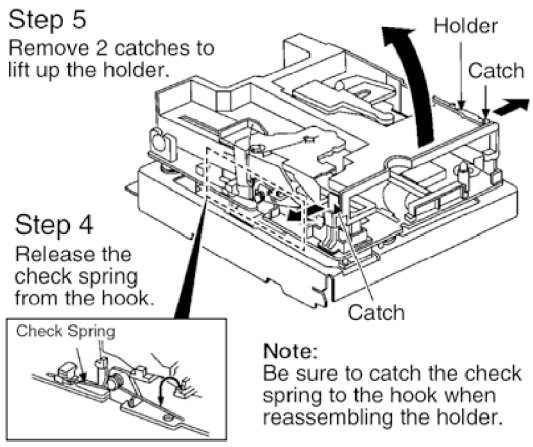
**- Follow Steps 1 to 8 described in Item 9.1.**
**- Follow Steps 1 and 2 described in Item 9.2.**
**- Follow Steps 1 to 6 described in Item 9.3.**




Note:
Insert the short pin to the flexible cable of the optical pickup. (Refer to "Note on Handling Optical Pickup".)

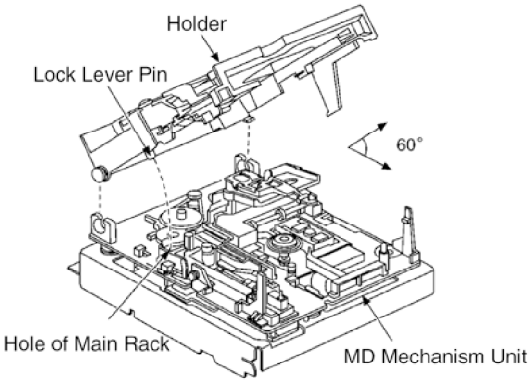



Note:
Be sure to catch the check spring to the hook when reassembling the holder.

Step 6

Remove the holder by tilting it at around an angle of 60° against the MD mechanism unit.



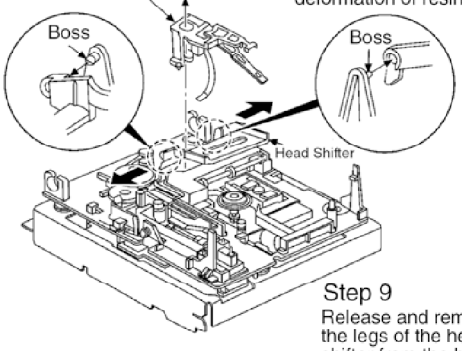

Note:
To reassemble the holder, be sure that the lock lever pin is inserted into the hole of the main rack.

Note:
1. Handle with care to avoid the deformation of the magnetic head.
2. Do not fasten the screw (b) too tightly (to avoid the deformation of resin parts.)

Step 8

Remove the magnetic head.

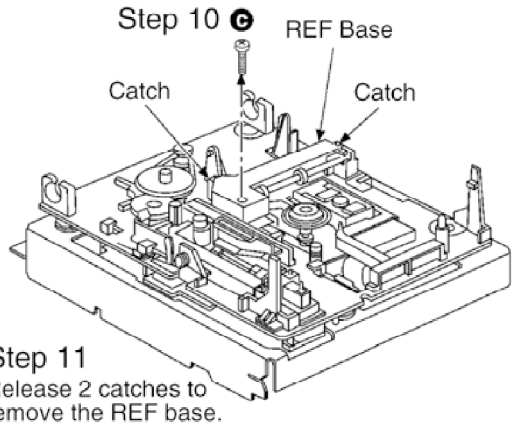
Step 7 ⓑ




Step 9

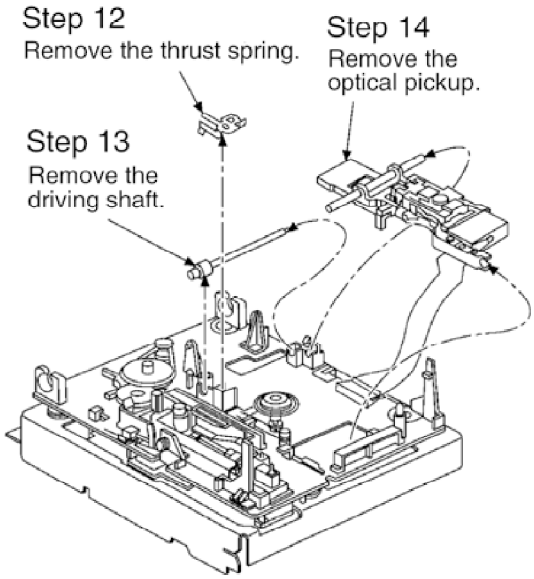
Release and remove the legs of the head shifter from the boss.

Step 10 ⓒ

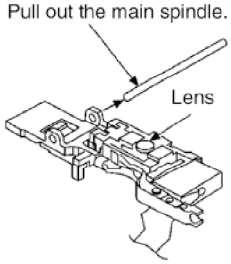



Step 11

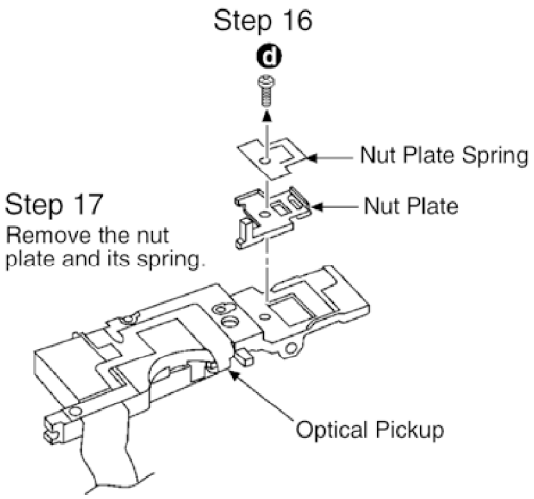
Release 2 catches to remove the REF base.

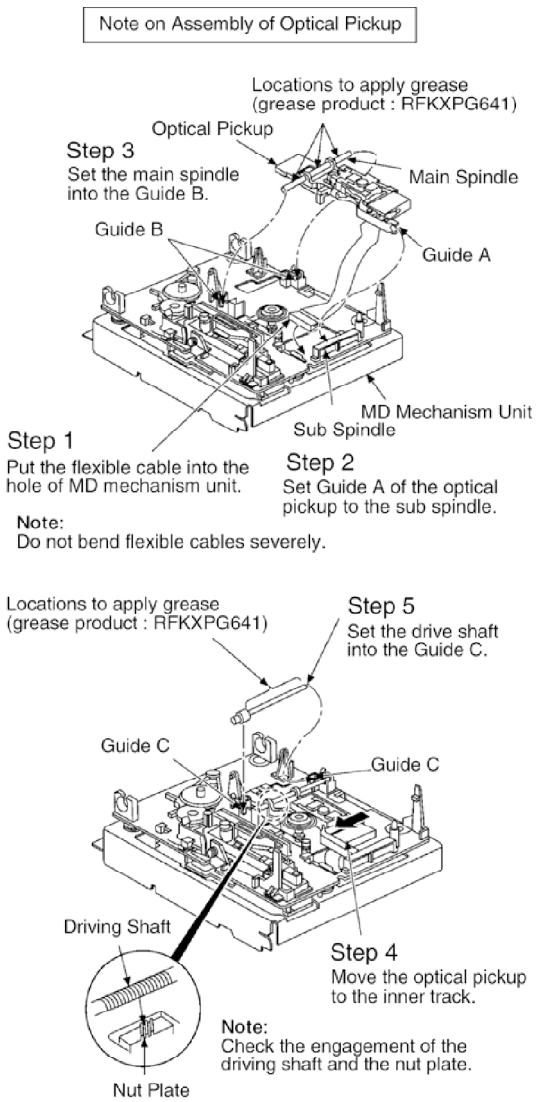



Step 15
Pull out the main spindle.




Note:
1. Do not apply impact to the optical pickup, which employs an extremely precision technique.
2. Keep grease away from the optical pickup lens.
3. Do not touch the optical pickup lens.



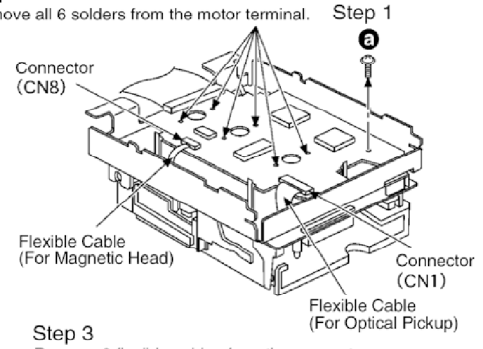



## 9.13. Procedure for Replacing Belt and Loading Motor (M3) (MD Mechanism Unit)

**- Follow Steps 1 to 8 described in Item 9.1.**
**- Follow Steps 1 and 2 described in Item 9.2.**
**- Follow Steps 1 to 6 described in Item 9.3.**
**- Follow Steps 1 and 2 described in Item 9.12.**

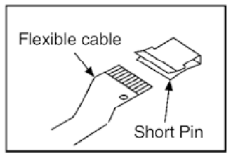
Step 2
Remove all 6 solders from the motor terminal.

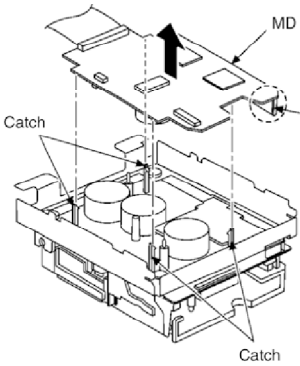
Step 1




Step 3
Remove 2 flexible cables from the connectors.

Note:
Insert the short pin into the flexible cable of the optical pickup. (Refer to "Note on Handling Optical Pickup".)

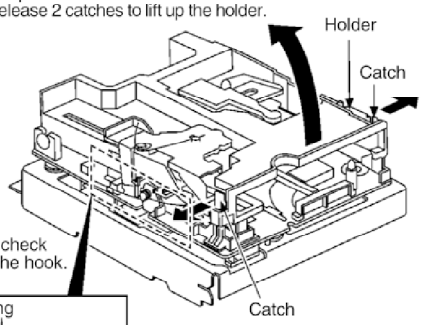


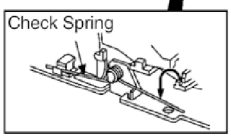

Note:
Remove the connector part circled in the dotted line before removing the MD Servo P.C.B.

Step 4
Release 4 catches to remove the MD Servo P.C.B.Connector

Step 6
Release 2 catches to lift up the holder.

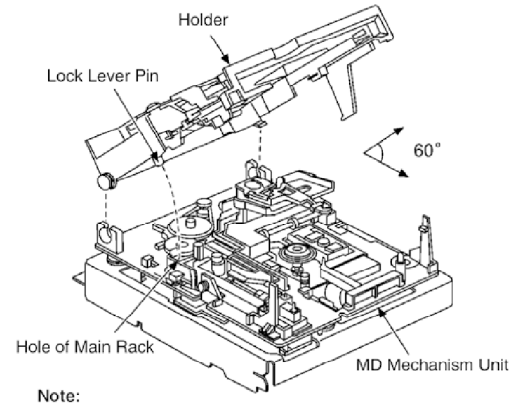



Step 5
Release the check spring from the hook.

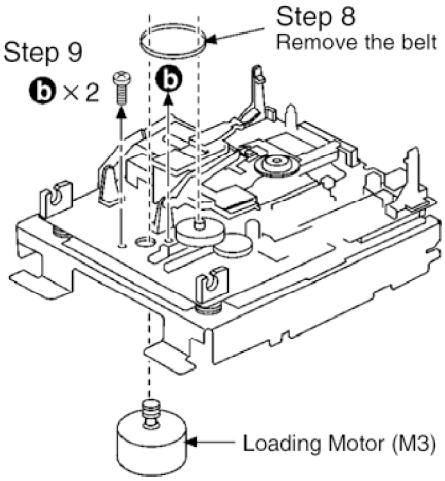



Note:
Be sure to catch the check spring to the hook when reassembling the holder.

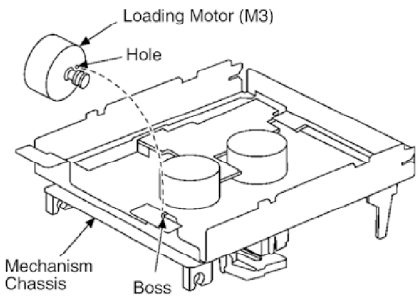
Step 7
Remove the holder by tilting it at around an angle of 60° against the MD mechanism unit.




Note:
To reassemble the holder, be sure that the lock lever pin is inserted into the hole of the main rack.




Note on Assembly of Loading Motor (M3)

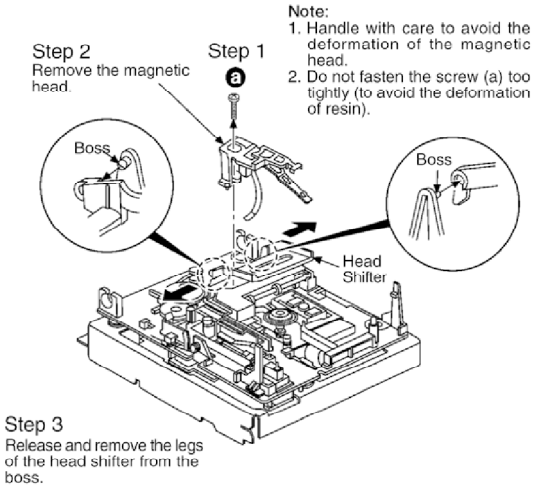


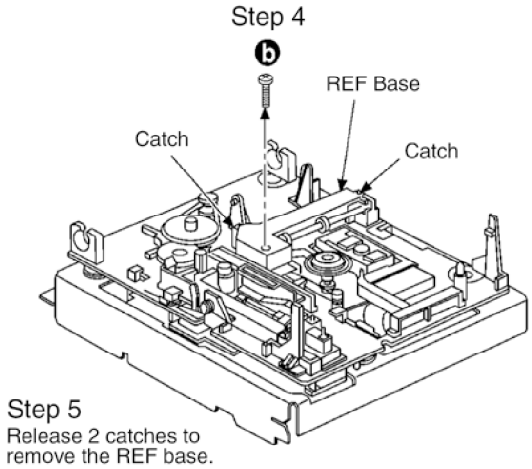

Put together the hole of the loading motor (M3) and the boss of the mechanism chassis to attach the loading motor (M3).

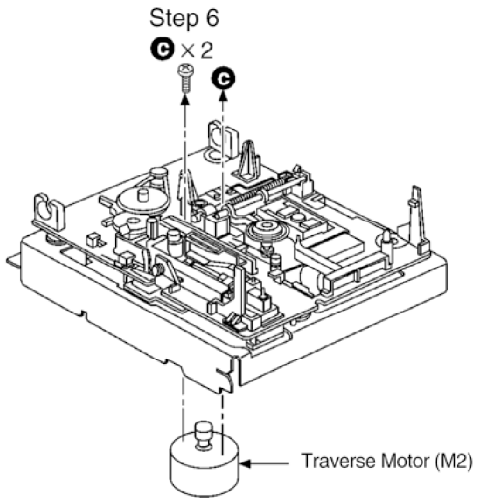
## 9.14. Procedure for Replacing Traverse Motor (M2) (MD Mechanism Unit)

**- Follow Steps 1 to 8 described in Item 9.1.**
**- Follow Steps 1 and 2 described in Item 9.2.**
**- Follow Steps 1 to 6 described in Item 9.3.**

**- Follow Steps 1 and 2 described in Item 9.12.**
**- Follow Steps 1 to 7 described in Item 9.13.**

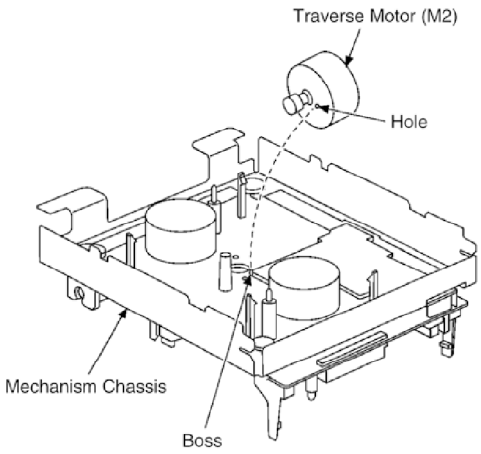

Note:
1. Handle with care to avoid the deformation of the magnetic head.
2. Do not fasten the screw (a) too tightly (to avoid the deformation of resin).
Step 2
Remove the magnetic head.
Step 1
a
Boss
Boss
Head Shifter
Step 3
Release and remove the legs of the head shifter from the boss.



Note on Assembly of Traverse Motor (M2)

- Put together the hole of the traverse motor (M2) and the boss of the mechanism chassis to attach the traverse motor (M2).

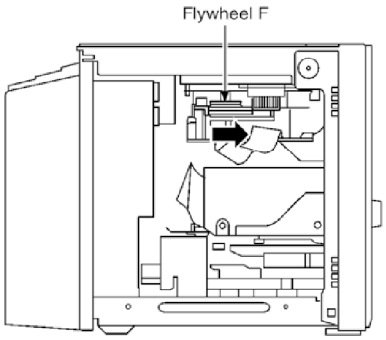



## 9.15. Troubleshooting for Tape Wrapping

**- Follow Steps 1 to 3 described in Item 9.1.**

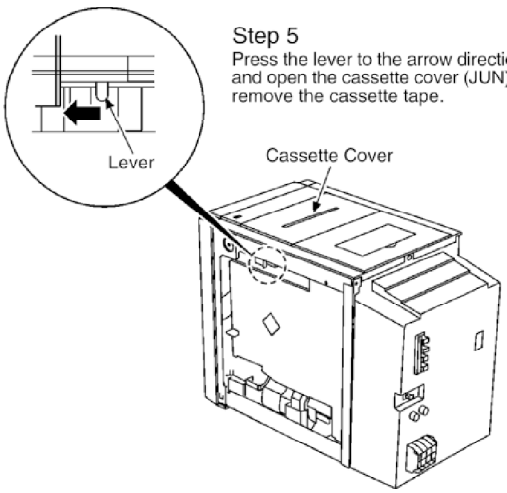
Step 1

If the cassette tape is stuck by the tape's wrapping around the capstan and pinch roller during playback or recording, turn the flywheel F to the arrow direction to release the tangled tape.




Step 5

Press the lever to the arrow direction, and open the cassette cover (JUN) to remove the cassette tape.




# 10. Procedure for Checking Operation of Individual

# Parts of Cassette Mechanism Unit

## 10.1. Operation Check with Cassette Tape

1. Pull up the EJECT lever using a rubber band. (Cf. Fig. 8)
2. Supply DC5V to MOTOR. ( → MOTOR rotates.) (Cf. Fig. 7)
3. Insert a cassette tape to the unit.
4. Supply DC9V to the plunger, and turn the power ON and OFF. ( → Power +PL, -PL) (Cf. Fig. 7)
   A. FWD PLAY: Supply the plunger power in a flash. (ON: approx. 5msec)
   B. FWD FF: Supply the plunger power in a flash at PLAY mode. (ON : approx. 5msec)
   C. STOP: Supply the plunger power in a flash at FWD FF mode. (ON : approx. 5msec)
   D. REV PLAY: Supply the plunger power in a normal timing at STOP mode. (ON: approx. 200msec)
   E. REV REW: Supply the plunger power in a flash at REV PLAY mode. (ON: approx. 50msec)
   F. STOP: Supply the plunger power in a flash at FF mode. (ON: approx. 50msec)
   Repeat the operation ( → FWD PLAY)
   (Note) Other operation may start if a timing of supplying the plunger power is missed.

### 10.1.1. Connection Status between Mechanism and Power Supply (Motor, Plunger)

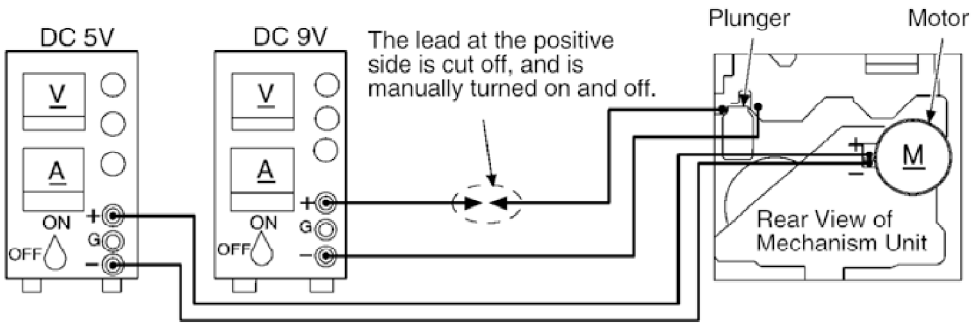



Fig. 7

### 10.1.2. Operative Parts of Mechanism Unit (EJECT lever fitted with rubber band, / Plunger/Rib operation)

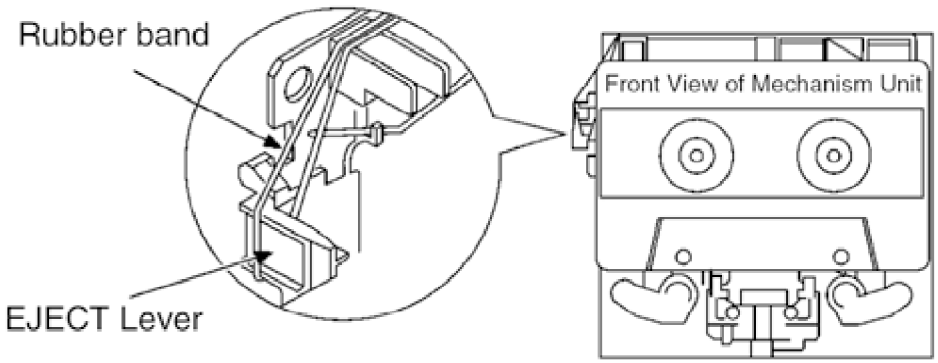



Fig. 8

### 10.2. Operation Check without Cassette Tape

**1. Pull up the EJECT lever using a rubber band. (Cf. Fig. 8)**

**2. Supply DC5V to MOTOR. ( → MOTOR rotates.)**

**3. Lift up the mechanism unit's plunger/rib with the tip of a negative screwdriver, and operate the unit in the same timing as / supplying the power. (Cf. Fig. 9) / (Note) Follow Step 4 in Item 1.1. for procedure on operating each function.**

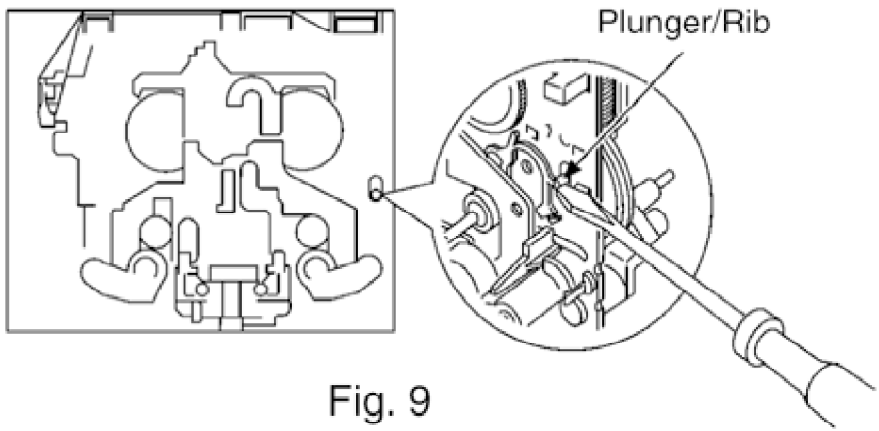



Fig. 9

# 11. Error Code Display and Servo Automatic Adjustment Function (CD Section)

**This unit displays error codes, as a result of automatic adjustment of CD servo circuit (tracking, focus, offset, etc.), which indicate the faulty parts in the circuit needed for repair. Following is the procedure for displaying the result of automatic adjustment (error codes). Note:**

**- Ensure that the surface of the test disc (SZZP1054C) is not scratched or smeared and that the optical pickup lens is clean.**

**- Prepare the remote controller that comes with the unit.**

## 11.1. Procedure for Displaying Error Codes

1. **Supply the power.**
2. **Press [CD ▶/ ⏸] button. (The power is turned on, and the unit is now set to CD mode.)**
3. **Press (OPEN/CLOSE [⏏] button to open the disc tray. Insert the test disc (SZZP1054C), and press [OPEN/CLOSE ⏏] button to close the disc tray. (Cf. Fig. 10)**
4. **While pressing and holding down [STOP ■] button on the unit, press the number key on the remote controller, (4) and then (7). ([●] is lit on the FL display.)**
5. **When the number key, [15] ([≥ 10] → [1] → [5]) is pressed, an error code appears as a result of automatic adjustment. Error codes help to detect the faulty parts in the servo circuit. The code "E-0" means "no faulty operation".**
6. **Press POWER button to turn off the power (or the unit will remain in the automatic adjustment display mode). (Cf. Fig. 10)**
7. **Press POWER button again, and press [OPEN/CLOSE ⏏] button to remove the test disc. (Fig. 10)**

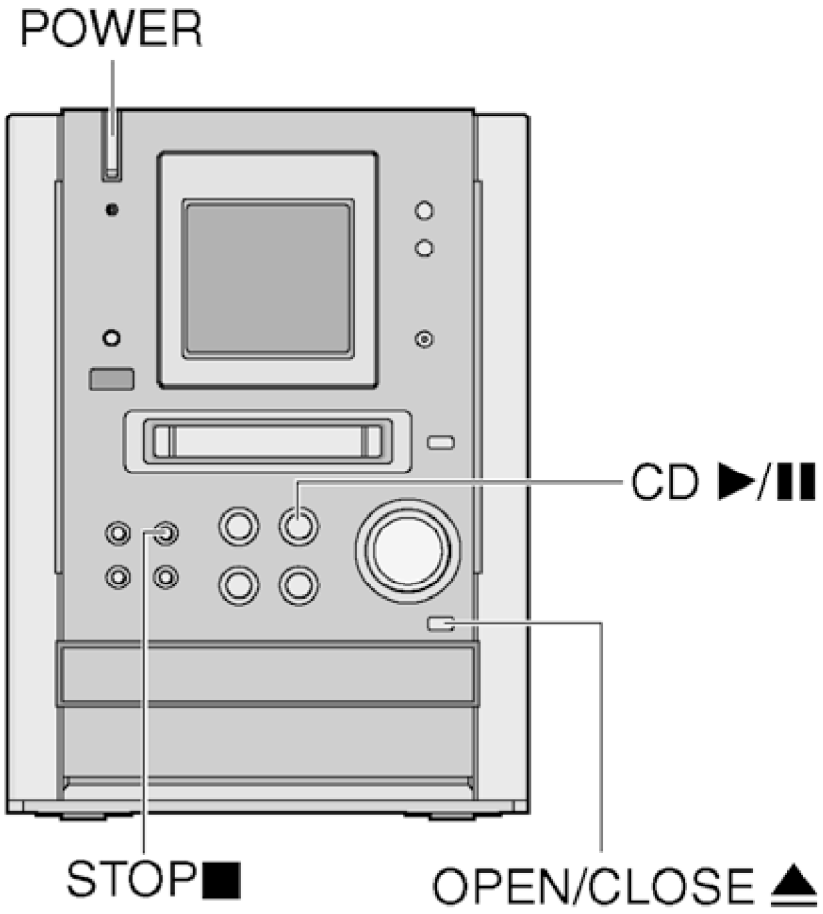
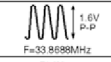
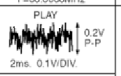
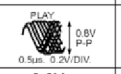
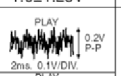



Fig. 10

| FL Display | Error | Cause | Check Points | | Normal Waveform | |
|---|---|---|---|---|---|---|
| | | | Pin | Signal Name | PLAY | STOP |
| E-1 | Focus tracking offset adjustment does not end in a specified time. | 1. Clock input XIN and power (VDD) at IC702 and reset (/RST) may not be working properly.<br>2. Signals MDA, MCLK, and MLD from IC301 may not be working properly. | Pin #8, IC702 | MDATA | | 0V |
| | | | Pin #7, IC702 | MCLK | | 3.2V |
| | | | Pin #9, IC702 | MLD | | 3.2V |
| | | | Pin #18, IC702 | /RST | 3.2V | 3.2V |
| | | | Pin #58, IC702 | X1 IN | | 1.5V |
| | | | Pin #59, IC702 | X2 OUT |  | 1.5V |
| E-2<br>E-4<br>E-6<br>E-A<br>E-C<br>E-E | CD play is erratic. | 1. CD may be damaged or smeared.<br>2. Focus/tracking servo circuit may not be working properly.<br>3. Spindle circuit may not be working properly.<br>4. Optical pickup may not be working properly. | Pin #32, IC702 | FE |  | 1.6V |
| | | | Pin #33, IC702 | TE | | |
| | | | Pin #28, IC702 | FOD | 1.6V | 1.6V |
| | | | Pin #27, IC702 | TRD | 1.6V | 1.6V |
| | | | Pin #38, IC702 | /RFDET | 0V | 3.1V |
| | | | TJC701 | STAT |  | 0.9V |
| | | | Pin #17, IC702 | FBAL | 3.3V | 0V |
| | | | Pin #30, IC702 | FE | 1.6±1.25V | 1.6±1.25V |
| E-8<br>E-A | Focus gain or tracking gain adjustment does not end in a specified time. | 1. CD may be damaged or smeared.<br>2. Focus servo circuit may not be working. (Check for the waveforms, voltage, and parts constant.)<br>3. Optical pickup may not be working properly. | Pin #32, IC702 | FE |  | 1.6V |
| | | | Pin #33, IC702 | TE | | |
| | | | Pin #36, IC702 | OFT | | 0V |

# 12. Measurement And Adjustments

## 12.1. Tuner/CD Sections

**No adjustment required.**

## 12.2. Cassette Deck Section

### 12.2.1. Requirements

**- Test tape (QZZCFM) (QZZCWAT)**
**- Normal blank cassette tape (QZZCRA)**
**- Frequency indicator**
**- Oscilloscope**
**- Electrical voltmeter**
**- Headphone jack output jig (Cf. Fig. 11)**

### 12.2.2. Setting of Unit

**- VOLUME: MAX**

### 12.2.3. Preparations

**1. Apply [9.1. Procedure for Checking Mechanism Control P.C.B., LCD P.C.B., Headphone/P-MD P.C.B., and USB P.C.B.] under [9. Disassembly and Main Component Replacement Procedures before Operation Checks].**

2. **Remove 4 screws from the mechanism unit to disassemble. (Refer to [9.6. Procedure for Replacing Pinch Roller (JUN) and Head Block (Cassette Mechanism Unit)] under [9. Disassembly and Main Component Replacement Procedures before Operation Checks].**
3. **Connect the headphone jack output jig (cf. Fig. 11) to headphone jack.**

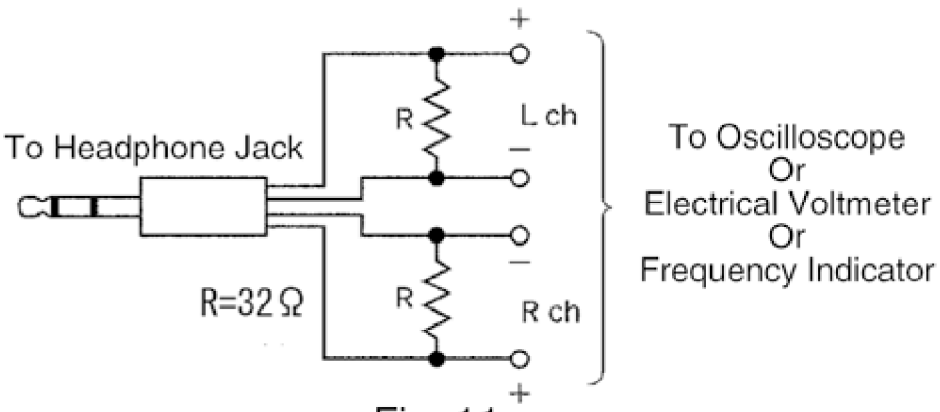



Fig. 11

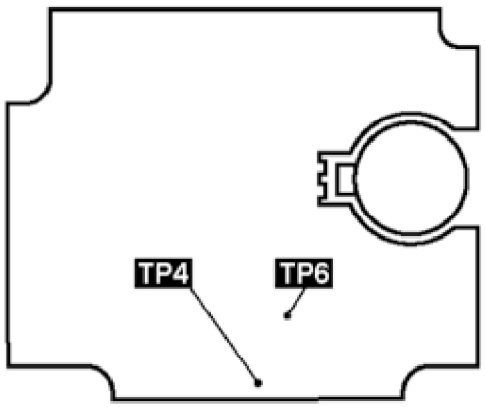



Fig. 12

### 12.2.4. Head Azimuth Adjustment

1. **Connect an oscilloscope. (Cf. Fig. 13)**
2. **Playback the azimuth adjustment portion (8kHz, -20dB) of the test tape (QZZCFM). Adjust the azimuth adjusting screw so that the output from Lch and Rch are set to maximum. (Cf. Fig. 14)**
3. **Adjust the azimuth by playing the test tape in reverse direction. Check the level difference when the tape is played in forward and reverse directions.**

4. **Playback the playback gain adjustment portion (315Hz, 0dB) of the test tape (QZZCFM). Check that the level difference when the tape is played in forward and reverse directions does not exceed 1.5dB.**
5. **After the adjustment, fasten screwlock to the azimuth adjusting screw.**
   **(Note)**
   **Before adjusting the head azimuth, be sure to remove the screwlock adhesive attached around the head for fine adjustments.**

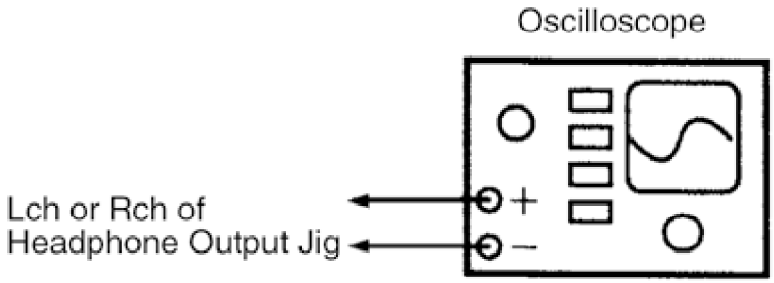



Fig. 13

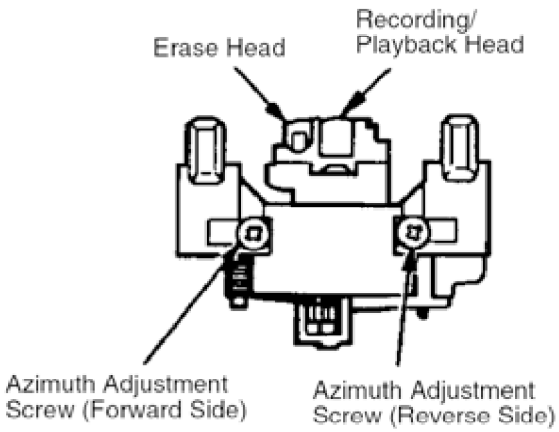



Fig. 14

### 12.2.5. Tape Speed Adjustment

**- Normal speed adjustment (only during forward playback)**
**(Product reference value: 3,000±90Hz)**

1. **Connect a frequency indicator. (Cf. Fig. 15)**
2. **Playback the middle portion of the test tape (QZZCWT).**
3. **Adjust the motor volume so that the following output level is**

**produced. (Cf. Fig. 16)**
**Adjustment Range: 3,000 ± 40Hz (a constant speed)**

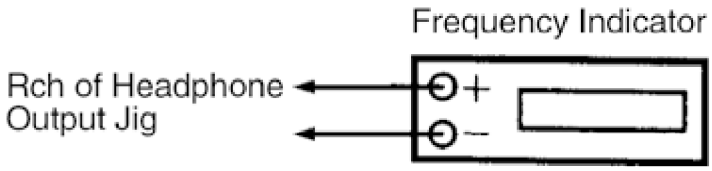



Fig. 15

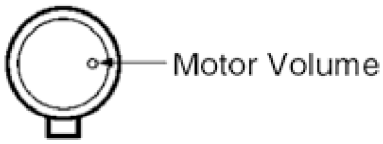



Fig. 16

### 12.2.6. Bias Voltage Check

1. **Connect an electrical voltmeter. (Cf. Fig. 12) (Cf. Fig. 17)**
2. **Set the function to "TAPE" position.**
3. **Insert a normal blank cassette tape (QZZCRA).**
4. **While pressing and holding down [REC (● / ▮▮)] button, press [TAPE (◀ ▶)] button to pause the recording mode. (Repeat pressing the buttons till the recording pause mode is activated.)**
5. **Check that the output level is within the standard range.**
   **Standard Range: 16 ± 3mV**

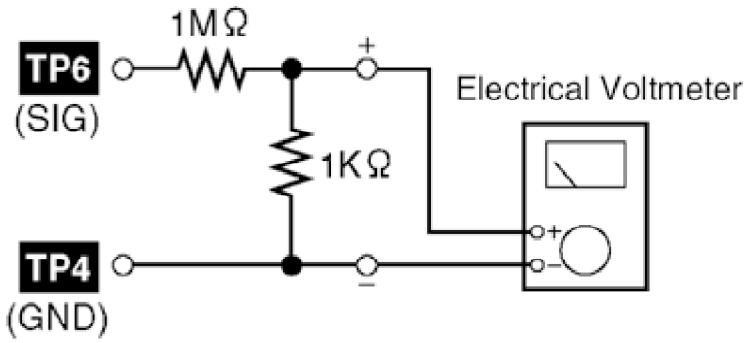



Fig. 17

## 12.3. MD Section

**This section employs the magneto-optical recording technology and emits laser beam at least 10 times higher than the level from CD player. Laser beam is emitted all the time at adjustment**

**mode, and therefore, please avoid looking at the beam and body contact during adjustment, operation check, etc.**

### 12.3.1. Adjustment and Measurement of Laser Power/Automatic Adjustment of Offset, RAM and ROM

**This section describes the procedure for adjusting the laser power (read power) for reading (playback) and the laser power (light power) for writing (recording).**

#### 12.3.1.1. Requirements

- **Laser power meter (Leader electronics: product #LE8010 or equivalent)**
- **ROM disc (pre-mastered disc: REV0006)**
- **RAM disc (re-writeable music disc)**
- **The remote controller that comes with the unit**

#### 12.3.1.2. Entering to Service Mode

1. **Follow Steps 1 to 8 in [9.3. Procedure for Checking MD Servo P.C.B.] of [9. Disassembly and Main Component Replacement Procedures before Operation Checks].**
2. **Remove the MD shield cover.**
3. **Press [MD ▶/❚❚] button while no MD, CD, or cassette tape is inserted to the unit. (The power is turned on, and the MD mode is activated.) (Cf. Fig. 18)**
4. **While pressing and holding down [STOP ■] button on the unit, press the number key on the remote controller, [4] and then [7].**
5. **[●] is lit on the FL display, and the service mode starts. (Cf. Fig. 18)**

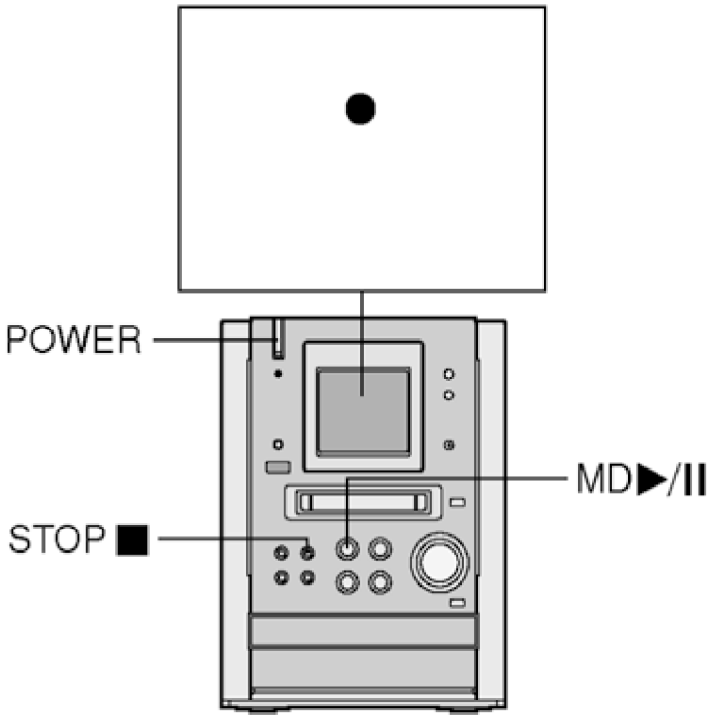


Fig. 18

**Note**

**1. Handling MD Unit**

**- Magnetic head is structurally precise, and is fragile. Handle with care to avoid deformation.**
**- The laser diode located in the optical pickup may be damaged by static electricity generated from clothes or human body. Handle with care to avoid such a situation.**
**- Do not apply impact to the optical pickup, which employs an extremely precision technique. Do not touch the lens.**

**2. Handling Magnetic Head**

**- Do not fasten the fitting screw (RH17022) too tightly to avoid resin parts after replacing a magnetic head, or the head position may be dislocated, and this will affect recording quality.**
**Recommended torque of fitting screw: 700g.cm ± 100g.cm**
**Cf.**
**(Fastening with a screwdriver with a grip size of 15mm, using the thumb and index finger will be an adequate degree of tightness.)**

**3. Handling Optical Pickup**

**- Optical pickup and magnetic head are structurally precise and fragile. Keep track of the tip of laser power meter contacting these parts.**
**- The sensor equipped with laser power meter is fragile. Keep track of the optical pickup lens contacting the part.**
**- Temperature generated in the center of laser beam exceeds approx. 180°C. Avoid a prolonged laser power adjustment as the center of laser power meter may be burned.**
**- The level of the light power should not exceed 6.0mW anytime, as this may deteriorate the optical pickup.**
**- Do not activate the laser power adjustment mode while MD is inserted to the unit, as this may deteriorate MD.**

12.3.1.3. Laser Power Adjustment

**1. Entering Laser Power Adjustment Mode**

*** Procedure for entering the adjustment mode depends on the type of laser power meter.**

**(For stick type of laser power meter)**

**a. Remove the laser power meter cover. (Cf. Fig. 19)**

**b. Move the sensor to the top right of the optical pickup. (Cf. Fig. 20)**

**c. At service mode, press the number key on the remote controller, "10", "2", and then**

**[1]. (Laser power adjustment mode is activated.)**

**→ FL Display: [PLAY PWR]**

**(For disc type of laser power meter)**

**a. At service mode, press [PLAY/REC] key on the remote controller. (Laser power adjustment mode is activated.)**

**→ FL Display: [PLAY PWE]**

**b. Insert the laser power meter. (Cf. Fig. 21)**

**2. While the above FL display appears, check the “read power value”.**

**If the value is out of the reference range, adjust with [⏮/ ∨ ], [ ∧ / ⏭] keys on the remote controller.**

**Reference Range (read power): 600±30 μ W**

**Note**

**If the read power value exceeds 630 μ W, and the further steps are continued, the optical pickup may be deteriorate or damaged.**

3. **Press [ENTER] key on the remote controller to save the read power value setting.**
   **→ FL Display: [PLAY PWR OK] flashes 3 times, and then [REC PWR] appears.**
4. **While the above FL display appears, check the "light power value".**
   **If the value is out of the reference range, adjust with [⏮/∨ ], [ ∧/ ⏭] keys on the remote controller.**
   **Reference Range (light power): 5.4±0.1mW**
   **Note**
   **The level of the light power should not exceed 6.0mW anytime, as this may deteriorate and damage the optical pickup.**
5. **Press [ENTER] key on the remote controller to save the light power value setting.**
   **→ FL Display: PLAY PWR OK flashes three times.**
6. **Press [MD EJECT] button on the unit to remove the laser power meter (disc type).**
7. **Now the laser power adjustment is complete. Continue to the procedure for "Laser Power Measurement".**

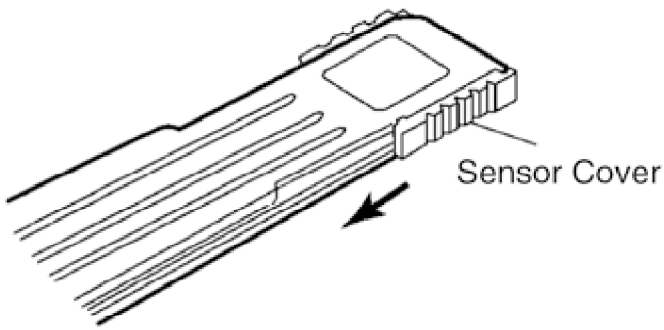



Fig. 19

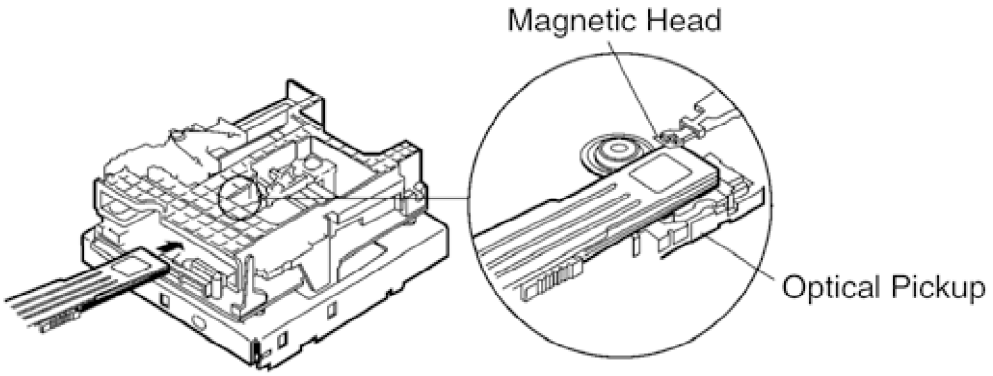



Fig. 20

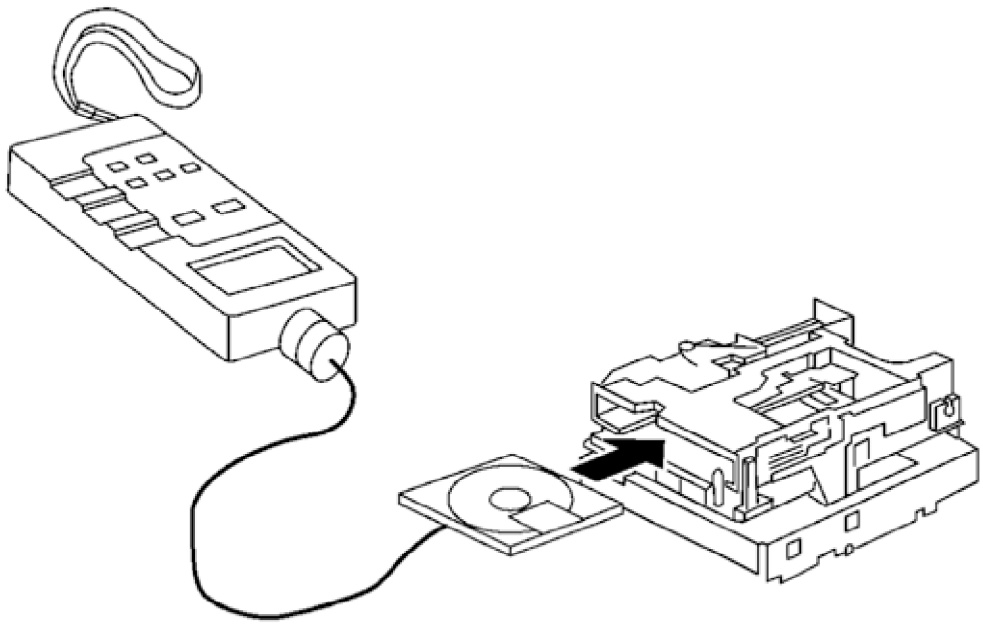


Fig. 21

#### 12.3.1.4. Laser Power Measurement

**Laser power (read power and light power) is output in order to check the current setting value.**

1. **At service mode, press [CLOCK/TIMER] key on the remote controller. (Laser power measurement mode is activated.)**
   **→ FL Display: CHK PLAY**
2. **Insert the disc type of laser power meter. (Cf. Fig. 21)**
3. **While the above FL display appears, check the read power value, and check that the value is not out of the reference range (600±30 μ W).**
4. **Press ENTER key on the remote controller.**
   **→ FL Display: CHK REC**

5. **While the above FL display appears, check the light power value, and check that the value is not out of the reference range (5.4± 0.1mW).**
6. **Press MD EJECT button on the unit to remove the laser power meter.**
7. **If the laser power value is out of reference range, turn off the power to start “laser power adjustment”. If not, continue to the procedure for “Offset Automatic Adjustment”.**

#### 12.3.1.5. Offset Automatic Adjustment

1. **At service mode, press the number keys, "10", "2" and then "2" on the remote controller. (Offset automatic adjustment mode is activated.)**
   **→ FL Display: OFFSET ADJ**
2. **When the adjustment is successful, the FL display shows the message, [OFFSET OK]. If there is an error, the display shows [OFFSET NG].**
   *** When [OFFSET NG] appears, check and follow “Troubleshooting Flowchart”.**
3. **Continue to “RAM Automatic Adjustment”**

#### 12.3.1.6. RAM Automatic Adjustment

1. **At service mode, press the number keys, [≥10], [2] and then [3] on the remote controller.**
   **→ FL Display: [RAM ADJ]**
2. **Insert the specified RAM disc. (RAM automatic adjustment starts.)**
3. **When the adjustment is successful, the FL display shows the message, [RAM ADJ. OK]. If there is an error, the display shows [RAM ADJ. NG].**
   *** When [RAM ADJ. NG] appears, check and follow “Troubleshooting Flowchart”.**
4. **Press [MD EJECT] button on the unit to remove the RAM disc.**
5. **Continue to “ROM Automatic Adjustment”.**

#### 12.3.1.7. ROM Automatic Adjustment

1. **At service mode, press the number keys, [≥10], [2] and then [4]**

**on the remote controller.**
**→ FL Display: [ROM ADJ].**

**2. Insert the specified ROM disc. (ROM automatic adjustment starts.)**

**3. When the adjustment is successful, the FL display shows the message, [ROM ADJ. OK]. If there is an error, the display shows [ROM ADJ. NG].**
*** When [ROM ADJ. NG] appears, check and follow "Troubleshooting Flowchart".**

**4. Press MD EJECT button on the unit to remove the ROM disc.**

#### 12.3.1.8. Exiting Service Mode

**1. Press [POWER] button on the unit to turn off the power.**

# 13. Illustration of IC's, Transistors and Diodes

# 14. Terminal Function of IC's

## 14.1. IC1 (AN22010A-VF) : RF AMP

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 1 | LDO | O | APC output terminal |
| 2 | LDIN | I | APC input terminal |
| 3 | APCPD | I | Photodiode optics level detection output/input terminal |
| 4 | APCREF | I | APC reference voltage input terminal |
| 5 | ARF0 | O | RF amplifier output terminal |
| 6 | NC | — | Not used/Open |
| 7 | EQIN | I | EQ input terminal |
| 8 | CRFAGC | — | RFAGC capacitor connection terminal (Connected to GND through capacitor) |
| 9 | OUTRF | O | EFM output terminal |
| 10 | NC | — | Not used/Open |
| 11 | PEAK | O | Output test waves at EFM light side |
| 12 | GND | — | GND |
| 13 | BOTM | O | Output test waves at EFM dark side |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 14 | CEA | I | 3T signal envelope detection capacitor connection input terminal (Connected to the power supply through capacitor) |
| 15 | MON3T | O | 3TMON output terminal |
| 16 | CC | O | Output test wave/amplitude at C-signal dark side |
| 17 | DD | I | Output test wave/amplitude at D-signal dark side |
| 18 | VCC | I | Power supply connection terminal |
| 19 | BB | O | B-signal I/V switch output terminal |
| 20 | AA | O | A-signal I/V switch output terminal |
| 21 | FF2 | O | F2 signal I/V switch output signal |
| 22 | FF1 | O | F1 signal I/V switch output signal |
| 23,24 | NC | — | Not used/Open |
| 25 | ADIP | O | ADIP signal output terminal |
| 26 | NC | — | Not used/Open |
| 27 | NREC | I | Record/playback switch signal input terminal |
| 28 | RFSWHL | I | Reflectance H/L switch signal input terminal |
| 29 | RFSWPG | I | Pit/group switch signal input terminal |
| 30 | GND | — | GND |
| 31 | NC | — | Not used/Open |
| 32 | MONIOFF | I | 3TMON circuit control signal input terminal |
| 33 | CLV2 | I | ADIP BPF switch signal input terminal |
| 34 | LDON | I | ACP circuit control signal input terminal |
| 35 | NRFSTBY | I | Standby control signal input terminal |
| 36 | TEMP | O | Temperature sensor output terminal |
| 37 | TEMP IN | I | Temperature sensor input terminal |
| 38 | F1 | I | F1 signal input terminal |
| 39 | F2 | I | F2 signal input terminal |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 40 | A | I | Main beam A-signal input terminal |
| 41 | B | I | Main beam B-signal input terminal |
| 42 | VREF | O | Reference voltage output terminal |
| 43 | RF2 | I | RF signal 2 input terminal |
| 44 | RF1 | I | RF signal 1 input terminal |
| 45 | CENVD | I | D-signal test wave capacitor input terminal (Not used/Open) |
| 46 | CENVC | I | C-signal test wave capacitor input terminal (Not used/Open) |
| 47 | D | I | Main beam D-signal input terminal |
| 48 | C | I | Main beam C-signal input terminal |

## 14.2. IC3 (MN66621ARG) : ATRAC ENCODER/DECODER, SERVO SIGNAL PROCESSOR

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 1 | TSO | I | Test input terminal (Not used /Connected to GND) |
| 2 | APCD | O | Laser power setting PWM output |
| 3 | RFSWPG | O | Pit/Groove setting signal output |
| 4 | RFSWHL | O | H/L reflectance setting signal output |
| 5 | CLV2 | O | High-speed switch signal output |
| 6 | REFM | O | EFM signal output |
| 7 | SPDM | O | Spindle negative side drive signal output |
| 8 | SPDP | O | Spindle positive side drive signal output |
| 9 | FODM | O | Focus negative side drive signal output |
| 10 | FODP | O | Focus positive side drive signal output |
| 11 | TRDM | O | Tracking negative drive signal output |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 12 | TRDP | O | Tracking positive drive signal output |
| 13 | DVDDD | — | Power supply input terminal (Used for digital circuit) |
| 14 | LDON | O | LD on/off control signal output |
| 15 | TVDM/ STP00 | O | Traverse negative side drive signal output/Stepper drive signal 0 output |
| 16 | TVDP/ ATP01 | O | Traverse positive side drive signal output/Stepper drive signal 1 output |
| 17 | SBCK/ ATP02 | O | Sub code Q register clock output/ Stepper drive signal 2 output |
| 18 | SUBC/ ATP10 | I | Sub code Q code output/ Stepper status input 0 |
| 19 | BLKCK/ STP11 | I | Sub code block clock signal input/Stepper status input 1 |
| 20 | NCLDCK | I | Sub code frame clock signal input/stepper status input 2 |
| 21 | NREC | O | Record/playback switch signal output |
| 22 | DRVSEL | I | Driver mode selection input |
| 23 | DATA/FG | I | CD data input/FG input |
| 24 | BCK | I | CD bit clock input |
| 25 | LRCK | I | CD word clock input |
| 26 | FS384 | O | External ADC/DAC reference clock output (384Fs) |
| 27 | SDAR | I | Audio data input |
| 28 | SDAP | O | Audio data output (Not used/ Open) |
| 29 | SWS | O | Word clock output |
| 30 | SCL | O | Bit clock output |
| 31 | RX2 | I | Digital audio interface input 2 |
| 32 | RX1 | I | Digital audio interface input 1 |
| 33 | TX | O | Digital audio interface output |
| 34 | DVDD1 | — | Power supply input terminal (Used for digital circuit) |
| 35 | DVSS1 | — | GND (Used for digital circuit) |
| 36 | SGSYNC | O | ATRAC process frame sync signal output |
| 37 | MDISY | O | Microcomputer interrupt signal (1) |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 38 | SCTSY | O | Microcomputer interrupt signal (2) |
| 39 | SSDR | O | System control read data output |
| 40 | SSDW | I | System control write data output |
| 41 | SSCK | I | System control shift clock signal input |
| 42 | SELAD | I | System control address signal selection signal input |
| 43 | MONI1 | O | Monitor output 1 (Not used/ Open) |
| 44 | MONI2 | O | Monitor output 2 (Not used/ Open) |
| 45 | MONI3 | O | Monitor output 3 (Not used/ Open) |
| 46 | NRST | I | Hardware reset signal input |
| 47 | ADACVSS | — | GND (Used for audio D/A converter) |
| 48 | ADACR | O | Audio Rch output |
| 49 | ADACL | O | Audio Lch output |
| 50 | ADACVDD | — | Power supply input terminal (Used for audio D/A converter) |
| 51 | AVSS0 | — | GND (Analog circuit) |
| 52 | PEAK | I | Servo A/D converter input signal |
| 53 | BOTM | I | Servo A/D converter input signal |
| 54 | OSC | I | Servo A/D converter input signal |
| 55 | MON3T | I | Servo A/D converter input signal |
| 56 | VREFI | I | Midpoint voltage input (reference voltage) |
| 57 | FF2 | I | Servo A/D converter input signal |
| 58 | FF1 | I | Servo A/D converter input signal |
| 59 | AVDD0 | — | Power supply input terminal (Used for analog circuit) |
| 60 | DD | I | Servo A/D converter input signal |
| 61 | CC | I | Servo A/D converter input signal |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 62 | BB | I | Servo A/D converter input signal |
| 63 | AA | I | Servo A/D converter input signal |
| 64 | AVSS1 | — | GND (Used for analog circuit) |
| 65 | PEFMS | I | EFM signal input |
| 66 | PEFM1 | O | Loop filter terminal 1 for EFM data slice |
| 67 | EFMFIL | O | Loop filter terminal 2 for EFM data slice (Not used/ Open) |
| 68 | EFMPLLF | O | EFMPLL filter terminal |
| 69 | EFMIREF | I | EFMPLL reference current electricity setting terminal |
| 70 | ADIP | I | ADIP signal input |
| 71 | AVDD1 | — | Power supply input terminal (Used for analog circuit) |
| 72 | MONI0 | O | Monitor output 0 (Not used/ Open) |
| 73 | RAD11 | O | DRM address output 11 (Not used/Open) |
| 74 | RAD10 | O | DRAM address output 10 (Not used/Open) |
| 75 | RAD9 | O | DRAM address output 9 |
| 76 | RAD8 | O | DRAM address output 8 |
| 77 | RAD7 | O | DRAM address output 7 |
| 78 | RAD6 | O | DRAM address output 6 |
| 79 | DVSS2 | — | GND (Used for digital circuit) |
| 80 | RAD5 | O | DRAM address output 5 |
| 81 | RAD4 | O | DRAM address output 4 |
| 82 | RAD3 | O | DRAM address output 3 |
| 83 | RAD2 | O | DRAM address output 2 |
| 84 | RAD1 | O | DRAM address output 1 |
| 85 | DVDD2 | — | Power supply input terminal (Used for digital circuit) |
| 86 | RAD0 | O | DRAM address output 0 |
| 87 | RDT3 | I/O | DRAM data output 3 |
| 88 | IVDD1 | — | Power supply for I/O pad |
| 89 | RDT2 | I/O | DRAM data output 2 |
| 90 | RDT1 | I/O | DRAM data output 1 |
| 91 | RDT0 | I/O | DRAM data output 0 |
| 92 | NRAS | O | DRAM load address strobe signal output |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 93 | NCAS | O | DRAM column address strobe signal output |
| 94 | NWE | O | DRAM write enable signal output |
| 95 | TS2 | I | Test input terminal (Not used /Connected to GND) |
| 96 | DVSS0 | — | GND (Used for digital circuit) |
| 97 | XO | O | Crystal oscillator output terminal (f=16.9344MHz) |
| 98 | XI | I | Crystal oscillator output terminal (f=16.9344MHz) |
| 99 | IVDD0 | — | Power supply for I/O pad |
| 100 | TS1 | I | Test input terminal (Not used /Connected to GND) |

## 14.3. IC10 (MN101C61GAA) : SYSTEM CONTROL

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 1 | VREF- | I | AD reference (-) input terminal |
| 2 | KEY1 | I | Key 1 input terminal |
| 3 | KEY2 | I | Key 2 input terminal |
| 4 | TEMP | I | Temperature sensor amplifier input terminal |
| 5 | SELADDA | I | AD/DA converter select signal input terminal |
| 6 | NO LOAD | I | Test signal input terminal (Open) |
| 7 | TSET KEY IN | I | Test signal input terminal (L: Unit key mode) (Open) |
| 8,9 | NC | O | Not used/Open |
| 10 | VREF+ | I | AD reference (+) input terminal |
| 11 | VDD | I | Power supply connection terminal (+3.3V) |
| 12 | OSC2 | O | Crystal oscillator circuit output terminal (f=10.02MHz) |
| 13 | OSC1 | I | Crystal oscillator circuit output terminal (f=10.02MHz) |
| 14 | VSS | — | GND terminal |
| 15 | XI | I | Not used/Connected to GND |
| 16 | X2 | O | Not used/Open |
| 17 | MMOD | — | Connected to GND |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 18 | TXD | — | Test signal output terminal (Not used/Open) |
| 19 | RXD | I | Test signal input terminal (Connected to power supply through resistance) |
| 20 | FCK | O | Test signal output terminal (Not used/Open) |
| 21 | SSDW | O | Microcomputer I/F write data output terminal |
| 22 | SSDR | I | Microcomputer I/F read data input terminal |
| 23 | SSCLK | O | Microcomputer I/F clock output terminal |
| 24 | LED OUT1 | O | Drive signal output to LED drive |
| 25 | RST | I | Reset signal input terminal |
| 26 | SELAD | O | Microcomputer I/F address select output terminal |
| 27,28 | LED OUT2,3 | O | Drive signal output to LED drive |
| 29 | LOAD0 | O | Loading motor drive 0 output terminal |
| 30 | LOAD1 | O | Loading motor drive 1 output terminal |
| 31 | PANEL REQ | I | Panel I/F request signal input terminal |
| 32 | NC | — | Not used/Open |
| 33 | SCTSY | I | Microcomputer interrupt signal input terminal (SUBQ/ ADIP sync signal) |
| 34 | CFSYNC | I | Microcomputer interrupt signal input terminal (MDA sync signal) |
| 35 | MDISYS | I | Microcomputer interrupt signal input terminal (Header sync signal) |
| 36 | PANEL DATA O | O | Panel I/F data output terminal |
| 37 | PANEL DATA I | I | Panel I/F data output terminal |
| 38 | PANEL CLK I | I | Panel I/F clock input terminal |
| 39 | PANEL CS | O | Panel I/F chip select output terminal |
| 40 | EEPCS | O | EEPROM chip select signal output terminal |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 41 | EEPCK | O | EEPROM clock signal output terminal (Not used/ Open) |
| 42 | EEPDATA O | O | EEPROM data output terminal (Not used/Open) |
| 43 | EEPDATA I | I | EEPROM data input terminal |
| 44 | ADDATA O | O | Test signal output terminal (Not used/Open) |
| 45 | ADCS | O | Test signal output terminal (Not used/Open) |
| 46 | ADCLK | O | Test signal output terminal (Not used/Open) |
| 47 | SLOCK | O | Spindle lock test signal output terminal (Not used/ Open) |
| 48 | TLOCK | O | Tracking lock test signal output terminal (Not used/ Open) |
| 49 | FLOCK | O | Focus lock test signal output terminal (Not used/ Open) |
| 50 | ERROR | O | Servo error test signal output terminal (Not used/ Open) |
| 51 | BUSY | O | Servo busy test signal output terminal (Not used/ Open) |
| 52 | SBPRETRY | O | Signal process retry test signal output terminal (Not used/Open) |
| 53 | SRVRETRY | O | Servo retry test signal output terminal (Not used/ Open) |
| 54 | TOC OK | O | TOC reading OK signal test output terminal (Not used/ Open) |
| 55 | T DATA | I | Debag (communication data input) |
| 56 | TCLK | I | Debag (communication clock input) |
| 57 | LOAD SWO (OPEN) | I | Loading mechanism position detect switch 0 input connection |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 58 | LOAD SW1 (TRG) | I | Loading mechanism position detect switch 1 input connection |
| 59 | LOAD SW2 (PLAY/ REC) | I | Loading mechanism position detect switch 2 input connection |
| 60 | LOAD SW3 (PLAY) | I | Loading mechanism position detect switch 3 input connection |
| 61 | DISC IN | I | Disc detect switch signal input terminal |
| 62 | REFLECT | I | Reflectance detect switch signal input terminal |
| 63 | PROTECT | I | Erase prevention switch signal input terminal |
| 64 | TVSW | I | Traverse most outer detect switch signal input terminal |
| 65 | SRVTEST | I | Test signal input terminal (L: Servo mode) (Open) |
| 66 | LOAD P | I | Test signal output terminal (Open) |
| 67 | SRV LOAD | I | Test signal input terminal (Open) |
| 68 | CS1 | I | Test signal input terminal (Not used/Open) |
| 69 | CS2 | I | Test signal input terminal (Not used/Open) |
| 70 | SPMWE | O | SPM retrieving test signal output terminal (Not used/ Open) |
| 71 | ADRSKIP | O | Address skip test signal output terminal (Not used/ Open) |
| 72 | MUTE | O | AD-DA mute output terminal (Not used/Open) |
| 73 | DEO | O | DE emphasis signal output terminal (Not used/Open) |
| 74 | DACRESET | O | D/A converter reset signal output terminal (Not used/ Open) |
| 75 | ADRST | O | Reset signal output terminal |
| 76 | NEFMON | O | Magnetic head reference voltage output terminal |
| 77 | HF ON | O | Test signal output terminal (Not used/Open) |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 78 | STB | O | 4ch driver standby output terminal (L:Standby) |
| 79 | NRFSTBY | O | RFAMP standby signal output terminal (L:Standby) |
| 80 | MSPRESET | O | MSP reset signal output terminal (L: Reset) |

## 14.4. IC72 (C3ABKB000041) : 4M DRAM

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 1 | DO1 | I/O | DRAM data 1 input/output terminal |
| 2 | DO2 | I/O | DRAM data 2 input/output terminal |
| 3 | WE | I | DRAM write enable input terminal |
| 4 | RAS | I | DRAM low address strobe input terminal |
| 5 | A9 | I | DRAM address 9 input terminal |
| 9 ~12 | A0 ~A3 | I | DRAM address 0 to 3 input terminal |
| 13 | VCC | I | Power supply terminal |
| 14 ~18 | A4 ~A8 | I | DRAM address 4 to 8 input terminal |
| 22 | OE | I | DRAM write enable input terminal (Not used/ Connected to GND) |
| 23 | CAS | I | DRAM column address strobe input terminal |
| 24 | DO3 | I/O | DRAM data 3 input/output terminal |
| 25 | DO4 | I/O | DRAM data 4 input/output terminal |
| 26 | VSS | — | GND terminal |

## 14.5. IC151 (C1BB00000527) : RDS

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 1 | VREF | O | Reference voltage output (Vdda/2) |
| 2 | MPXIN | I | Baseband (multiplexed) signal input |
| 3 | VDDA | — | Analog power supply (+5V) |
| 4 | VSSA | — | Analog ground |
| 5 | FLOUT | O | Subcarrier output (filter output) |
| 6 | CIN | I | Subcarrier input (comparator input) |
| 7 | TEST | I | Test input |
| 8 | XOUT | O | Crystal oscillator output (4.332MHz) |
| 9 | XIN | I | Crystal oscillator input (external reference signal input) |
| 10 | VSSD | — | Digital ground |
| 11 | VDDD | — | Digital power supply (+5V) |
| 12 | MODE | I | Readmode setting (0: master, 1:slave) |
| 13 | RST | I | RDS-ID RAM reset (positive polarity) |
| 14 | RDDA | O | RDS data output |
| 15 | RDCL | I/O | RDS clock output (master mode) / RDS clock input (slave mode) |
| 16 | RDS-ID/ READY | O | RDS-ID/READY output (negative polarity) |

## 14.6. IC701 (AN8885SBE1) SERVO AMPLIFIER

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 1 | PDE | I | Tracking signal input terminal (1) |
| 2 | PDF | I | Tracking signal input terminal (2) |
| 3 | VDD | — | Power supply connection terminal |
| 4 | PDA | I | Focus signal input terminal (1) |
| 5 | PDB | I | Focus signal input terminal (2) |
| 6 | LPD | I | APC amplifier input terminal |
| 7 | LD | O | APC amplifier output terminal |
| 8 | RF | O | RF addition output terminal |
| 9 | RF IN | I | RF detect signal input terminal |
| 10 | CSBRT | I | OFTR capacitor connection terminal |
| 11 | CEA | I | Capacitor terminal for H.P.F amplifier |
| 12 | BDO | O | Dropout signal output terminal (H:Dropout) |
| 13 | LDON | I | APC control input terminal |
| 14 | GND | — | GND terminal |
| 15 | /RFDET | O | RF detect signal output terminal (L:Detect) |
| 16 | PDOWN | I | Reduced voltage detection signal input terminal |
| 17 | OFTR | O | Off track signal output terminal (H:Off track) |
| 18 | DEFLVL | — | GND terminal |
| 19 | ENV | O | RF envelope signal output terminal |
| 20 | GCTL | I | RF/FE/TE addition control terminal |
| 21 | EQSW | — | GND terminal |
| 22 | TE IN | I | Tracking error amplifier input terminal |
| 23 | TE OUT | O | Tracking error amplifier output terminal |
| 24 | FE OUT | O | Focus error amplifier output terminal |
| 25 | FE IN | I | Focus error amplifier input terminal |
| 26 | VREF | O | Reference voltage output terminal |

| | | | terminal |
|---|---|---|---|
| Pin No. | Mark | I/O | Function |
| 27 | TBAL | I | Tracking balance signal input terminal |
| 28 | FBAL | I | Focus balance signal input terminal |

## 14.7. IC702 (MN662790RSC) SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR / DIGITAL FILTER / D/A CONVERTER

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 1 | BCLK | O | Bit clock output for serial data |
| 2 | LRCK | O | L/P clock signal output |
| 3 | SRDATA | O | Serial data output |
| 4 | DVDD1 | I | Power supply input (for Digital Circuit) |
| 5 | DVSS1 | I | Ground (for Digital Circuit) |
| 6 | TX | O | Digital audio interface signal output (Latches data at first transistion) |
| 7 | MCLK | I | Microprocessor Command Clock Signal Input |
| 8 | MDATA | I | Microprocessor Command Data Signal Input |
| 9 | MLD | I | Microprocessor Command Load Signal Input |
| 10 | SENSE | I | Sense Signal Output (OFT, FESL, MAGEND, NAJEND, POSAD, SFG) (Not Used, Open) |
| 11 | /FLOCK | O | Focus Servo Feeding Signal Output (“L”: Feed) |
| 12 | /TLOCK | O | Tracking Servo Feeding Signal Output (“L”:Feed) |
| 13 | BLKCK | O | Sub-Code Block Clock Signal Output (fBLKCK = 75Hz during Normal Playback) |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 14 | SQCK | I | External Clock Signal Input for Sub-Code Q Resistor) |
| 15 | SUBQ | O | Sub-Code Q Code Output |
| 16 | DMUTE | I | Muting Input (“H”: Mute) |
| 17 | STAT | O | Status Signal Output (CRC, CUE, CLVS, TTSTVP, FCLV, SQCK) |
| 18 | /RST | I | Reset Signal Input |
| 19 | SMCK | O | 1/2 - Divided Clock Signal of Crystal Oscillating at MSEL= “H” (fSMCK=8.4672 MHz)<br>1/4 - Divided Clock Signal of Crystal Oscillating at MSEL= “L” (fSMCK=4.2336 MHz) |
| 20 | CSEL | I | Frequency Selection Terminal H= 33.8688 MHz; L= 16.9344 MHz |
| 21 | TRV | O | Traverse Forced Feed Output |
| 22 | TVD | O | Traverse Drive Output |
| 23 | PC | O | Traverse (Spindle) Motor ON Signal Output (“L”:ON) |
| 24 | ECM | O | Spindle Motor Drive Signal Output (Forced Mode Output) |
| 25 | ECS | O | Spindle Motor Drive Signal Output.<br>(Servo Error Signal Output) |
| 26 | KICK | O | Kick Pulse Output |
| 27 | TRD | O | Tracking Drive Output |
| 28 | FOD | O | Focus Drive Output |
| 29 | VREF | I | D/A (Drive) Output (TVD, ECS, TRD, FOD, FBAL, TBAL) Reference Voltage Input |
| 30 | FBAL | O | Focus Error Signal Input (Analog Input) |
| 31 | TBAL | O | Tracking Balance Adjustment Output |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 32 | FE | I | Focus Error Signal Input (Analog Input) |
| 33 | TE | I | Tracking Error Signal Input (Analog Input) |
| 34 | RFENV | I | RF Envelope Signal Input |
| 35 | VDET | I | Vibration Detection Signal Input ("H": Detect) |
| 36 | OFT | I | Off-Track Signal Input ("H": Off Track) |
| 37 | TRCRS | I | Track Cross Signal Input) |
| 38 | /RFDET | I | RF Detection Signal Input ("L": Detect) |
| 39 | BDO | I | Dropout Signal Input ("H": Dropout) |
| 40 | LDON | O | Laser on Signal Output ("H": ON) |
| 41 | PLLF2 | I/O | PLL Loop Filter Characteristic Switching Terminal |
| 42 | TOFS/ DSLF2 | O | Tracking Offset Alignment Output/ DSL Balance Output (DA Output) |
| 43 | WVEL | O | Double Speed Status Signal Output ("H":DS) |
| 44 | ARF | I | RF Signal Input |
| 45 | IREF | I | Reference Current Input |
| 46 | DRF | I | DSL Bias Terminal |
| 47 | DSLF | I/O | DSL Loop Filter |
| 48 | PLLF | I/O | PLL Loop Filter |
| 49 | VCOF | I/O | VCO Loop Filter Terminal |
| 50 | AVDD2 | I | Power Supply Input (For Analog Circuit) |
| 51 | AVSS2 | I | GND (For Analog Circuit) |
| 52 | EFM | O | EFM Signal Output (Not Used, Open) |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 53 | PCK | O | PLL Extraction Clock Output (Not Used, Open)<br><br>(fPCK= 4.3218 MHz during Normal Playback) |
| 54 | VCOF2 | I/O | VCO loop Filter for 33.8688 MHz Conversion Terminal for 16.9344 Mhz Crystal mode, Must use other Circuit) |
| 55 | SUBC | O | Sub-Code Serial Data Output (Not Used, Open) |
| 56 | SBCK | I | Clock Input for Sub-Code Serial Data) |
| 57 | VSS | I | GND |
| 58 | X1 IN | I | Crystal Oscillating Circuit Input<br>(f= 16.9344 MHz) |
| 59 | X2 OUT | O | Crystal Oscillating Circuit Input<br>(f= 16.9344 MHz) |
| 60 | VDD | I | Power Supply Input (For Oscillating Circuit) |
| 61 | BYTCK | O | Byte Clock Output (Not Used, Open) |
| 62 | /CLDCK | O | Sub-Code Frame Clock Signal Output<br>(fCLDCK= 7.35 kHz During Normal Playback) |
| 63 | FCLK | O | Crystal Frame Clock Signal Output)<br>(fCLDCK= 7.35 kHz) |
| 64 | IPFLAG | O | Interpolation Flag Output<br>(“H”: Interpolation) (Not Used, Open) |
| 65 | FLAG | O | Flag Output (Not Ised, Open) |
| 66 | CLVS | O | Spindle Servo Phase Synchronizing Signal Output<br>(“H”: CLV, “L”: Rough Servo) (Not used, Open) |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 67 | CRC | O | Sub-Code CRC Checked Output ("H": OK, "L" NG) (Not Used, Open) |
| 68 | DEMPH | O | De-Emphasis DN Signal Output ("H":ON) |
| 69 | RESY | O | Frame Re-synchronizing Signal Output |
| 70 | IOSEL | I | Mode Switching Terminal |
| 71 | /TEST | I | Test Input |
| 72 | AVDD1 | I | Power Supply Input (For Analog Circuit) |
| 73 | OUTL | O | Left Channel Audio Signal Output |
| 74 | AVSS1 | I | GND |
| 75 | OUTR | O | Right Signal Audio Signal Output |
| 76 | RSEL | I | RF Signal Polarity Assignment Input (at "H" level, RSEL= "H", at "L" SEL= "L") |
| 77 | IOVDD | I | 5V Supply |
| 78 | PSEL | I | Test terminal (Connected to GND) |
| 79 | MSEL | I | SMCK Oscillating Frequency Designation Input ("L": 4.2336 MHz, "H" 8.4672MHz) |
| 80 | SSEL | I | SUBQ Output Mode Select ("H": Q-Code Buffer Mode) |

## 14.8. IC703 (BA5948FPE2) FOCUS COIL / TRACKING COIL / TRAVERSE MOTOR / SPINDLE MOTOR DRIVE

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 1 | IN2 | I | Motor Driver (2) Input |
| 2 | PC2 | I | Turntable Motor Drive Signal ("L":ON) |
| 3 | IN1 | I | Motor Driver (1) Input |
| 4 | PC1 | — | Traverse Motor Drive Signal ("L":ON) |
| 5 | N.C. | — | No connection |
| 6 | N.C. | — | No connection |
| 7 | N.C. | — | No connection |
| 8 | N.C. | — | No connection |
| 9 | PGND1 | — | Ground Conenction (1) for Driver |
| 10 | PVCC1 | I | Power Supply (1) for Driver |
| 11 | D1- | O | Motor Driver (1) reverse - action output |
| 12 | D1+ | O | Motor Driver (1) forward - action output |
| 13 | D2- | O | Motor Driver (2) reverse - action output |
| 14 | D2+ | O | Motor Driver (1) forward - action output |
| 15 | D3- | O | Motor Driver (3) reverse - action output |
| 16 | D3- | O | Motor Driver (3) forward - action output |
| 17 | D4- | O | Motor Driver (4) reverse - action output |
| 18 | D4+ | O | Motor Driver (4) forward - action output |
| 19 | PVCC2 | I | Power Supply (2) for Driver |
| 20 | PGND2 | — | Ground Connection(2) for Driver |
| 21 | N.C. | NC | No Connection |
| 22 | N.C. | NC | No Connection |
| 23 | N.C. | NC | No Connection |
| 24 | N.C. | NC | No Connection |
| 25 | VCC | I | Power Supply Terminal |
| 26 | VREF | I | Reference Voltage Input |
| 27 | IN4 | I | Motor Driver (4) Input |
| 28 | IN3 | I | Motor Driver (3) Input |

## 14.9. IC502 (MN101C49KCB1) SYSTEM MICROPROCESSOR

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 1 | VREF- | — | Connected to GND |
| 2 | KEY1 | I | Key 1 input terminal |
| 3 | KEY2 | I | Key 2 input terminal |
| 4 | MK_IN1 | I | Mechanism condition 1 input terminal (HALF/ RECI_F/ RECI_R/MODE) |
| 5 | MK_IN2 | I | Mechanism condition 2 input terminal (PHOTO/ TPS) |
| 6 | DCDET | I | Power supply detect input terminal |
| 7 | DES | I | Destination switch input terminal |
| 8 | VOL JOG1 | I | Jog 1 input terminal |
| 9 | VOL JOG2 | I | Jog 2 input terminal |
| 10 | VREF+ | I | Power supply connection terminal |
| 11 | VDD | I | Power supply input terminal |
| 12 | OSC2 | O | Main lock signal output terminal (F=8MHz) |
| 13 | OSC1 | I | Main lock signal input terminal (F=8MHz) |
| 14 | VSS | — | GND terminal |
| 15 | XI | I | Sub clock input terminal (F=32MHz) |
| 16 | XO | O | Sub clock output terminal (F=32MHz) |
| 17 | MMOD | — | GND terminal |
| 18 | PMD_OUT | O | P-MD data output terminal |
| 19 | PMD_IN | I | P-MD data input terminal |
| 20 | RDS_CLK | I | RDS clock input terminal |
| 21 | NC | — | Not used/Open |
| 22 | CD_SUBQ | I | CD sub-code input terminal |
| 23 | CD_SQCK | O | CD sub-code read clock output terminal |
| 24 | NC | — | Not used/Open |
| 25 | PCONT2 | O | Power supply control 2 output terminal |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 26 | RMC IN | I | Remote controller input terminal |
| 27 | SYNC/HALT | I | Power-failure detect pulse input terminal |
| 28 | CD OP SW | I | CD tray open detect switch input terminal (H :Open, L:Close) |
| 29 | CD_REST SW | I | Rest switch input terminal |
| 30 | CD_BLKCK | I | CD sub code block clock input terminal |
| 31 | MD CS | I | MDCS input terminal |
| 32 | CD_STAT | I | CD status signal input terminal |
| 33 | MICON RST | I | Microcomputer reset signal input terminal |
| 34 | NC | — | Not used/Open |
| 35 | CD RESET | O | CD reset signal input terminal |
| 36 | CD_MLD | O | Not used/Open |
| 37 | CD_MDATA | O | CDLSI command load signal output terminal |
| 38 | CD_MCLK | O | CDLSI command data signal output terminal |
| 39 | NC | — | CDLSI command clock signal output terminal |
| 40 | LCD_RST | O | LCD reset signal output terminal |
| 41 | LCD CS | O | LCD chip select output terminal |
| 42 | LCD DATA | O | LCD data output terminal |
| 43 | NC | — | Not used/Open |
| 44 | LCD CLK | O | LCD clock output terminal |
| 45 | MD_DATAOUT | O | MD data output terminal |
| 46 | MD_DATAIN | I | MD data input terminal |
| 47 | MD_CLK | O | MD clock output terminal |
| 48 | MD_LOADSW | I | MD loading switch input terminal (H: Switch off) |
| 49 | MD_RST | O | MD reset output terminal (L: Reset) |
| 50 | MD_REQ A | O | MD request signal output terminal |
| 51 | NC | — | Not used/Open |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 52 | HP_SW | I | Headphone detect switch output terminal |
| 53 | MUTE A | O | Audio mute output terminal |
| 54 | PCONT1 | O | Power supply control 1 output terminal |
| 55 | S.V. | O | Theater sound control signal output terminal (H: Theater ON) |
| 56 | ASP_CLK | O | ASP clock signal output terminal |
| 57 | ASP_DAT | O | ASP data output terminal |
| 58 | NC | — | Not used/Open |
| 59 | EDGE LED | I | Model switch setting input terminal |
| 60 | LCD RGB | I | Model switch setting input terminal |
| 61 | EDATA | I/O | EEPROM data input/ output terminal |
| 62 | ECLK | O | EEPROM clock output terminal |
| 63 | ECS | O | EEPROM CS output terminal |
| 64 | NC | — | Not used/Open |
| 65 | SD | I | Tuner signal detect input terminal |
| 66 | PLL CE | O | PLL chip enable output terminal |
| 67 | PLL DATAOUT | O | PLL count data output terminal |
| 68 | PLL DATAIN | I | PLL control data input terminal |
| 69 | PLL CLK | O | PLL clock output terminal |
| 70 | MOTORH | O | Deck motor control output terminal (H: ON) |
| 71 | PL H | O | Deck plunger control output terminal (H: ON) |
| 72 | MIC L | O | Mobile phone mode switch output terminal (L: Mobile mode) |
| 73 | USB L | I/O | PC LINK mode switch input/output terminal (L: PC LINK mode) |
| 74 | TAPE EJ | I | Tape eject switch input terminal (L: SW ON) |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 75 | CR02 | — | Not used (Connected to ground through resistance) |
| 76 | RECH | O | Deck record control output terminal |
| 77 | BP | O | AM record beat-proof frequency conversion output terminal |
| 78 | DMT | O | Deck mute output terminal (L:Mute ON) |
| 79 | CD GAIN0 | — | Not used (Connected to ground through resistance) |
| 80 | CD GAIN1 | — | Not used (Connected to ground through resistance) |
| 81 | NC | — | Not used/Open |
| 82 | NC | — | Not used/Open |
| 83 | LED_MDLP | O | LED output terminal for MD record mode |
| 84 | TUNER_L | O | USB power ON/OFF switch output terminal (L: Tuner / USB Off) |
| 85 | LED_LCH | O | Left edge light LED output terminal (H: ON) |
| 86 | LED_RCH | O | Right edge light LED output terminal (H: ON) |
| 87 | LED_RED | O | Red LCD backlight output terminal |
| 88 | LED_GRN | O | Green LCD backlight output terminal |
| 89 | LED_BLE | O | Blue LCD backlight output terminal |
| 90 | NC | — | Not used/Open |
| 91 | NC | — | Not used/Open |
| 92 | CRTIMER | I | CR timer input terminal |
| 93 | LD_SPD | I | Loading speed control switch input terminal |
| 94 | S/W RST | — | Not used (Connected to ground through resistance) |
| 95 | VREF- | — | GND terminal |
| 96 | CD_CLS_H | O | CD tray close low-speed output terminal |
| 97 | CD_OPN_L | O | CD tray open low-speed output terminal |

| Pin No. | Mark | I/O | Function |
|---|---|---|---|
| 98 | CLOSE_L | O | CD tray close control output terminal |
| 99 | OPEN_H | O | CD tray open control output terminal |
| 100 | VREF+ | I | Connected to power supply |

# 15. Block Diagram

# 16. Schematic Diagram

**(All schematic diagrams may be modified at any time with the development of new technology)**

**Note :**

**S1**

**PROTECT detect switch**

**S3**

**LOAD OPEN detect switch**

**S4**

**DISC IN detect switch**

**S5**

**LOAD PLAY/REC detect Switch**

**S6**

**LOAD PLAY detect Switch**

**S7**

**LOAD TRG detect switch**

**S8**

**Traverse detect switch**

**S701**

**Reset switch**

**S701**

**Rest switch**

**S780**

**Open switch**

**S971**

**Mode detect switch**

**S972**
**Tape detect switch**

**S973**
**CrO2 detect switch**

**S974**
**Record detect switch**

**S975**
**Record detect switch**

**SW630**
**Power switch**

**SW631**
**Display / Character switch**

**SW632**
**MD-Eject switch**

**SW633**
**LP2 / 4 switch**

**SW634**
**MD-Rec switch**

**SW635**
**Tape-Rec switch**

**SW681**
**CD Open / Close switch**

**SW682**
**Tape switch**

**SW683**
**Tuner switch**

**SW684**
**CD switch**

**SW685**
**MD switch**

**SW686**
**Selector switch**

**SW687**
**FF switch**

**SW688**
**Stop switch**

**SW689**
**Rew switch**

**SW761**
**USB / Ext-in switch**

**VR681**
**VR volume**

**- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.**

**No mark**
**: Playback**

**<< >>**
**: Rec**

**(( ))**
**: CD**

**< >**
**: FM**

**( )**
**: AM**

**(for MD Servo Circuit)**

**( )**
**: MD play [1kHz, L+R, 0dB]**

**< >**
**: MD rec. [1kHz, L+R, 0dB]**

**{ }**
**: MD**

**- Importance safety notice :**

**Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.**

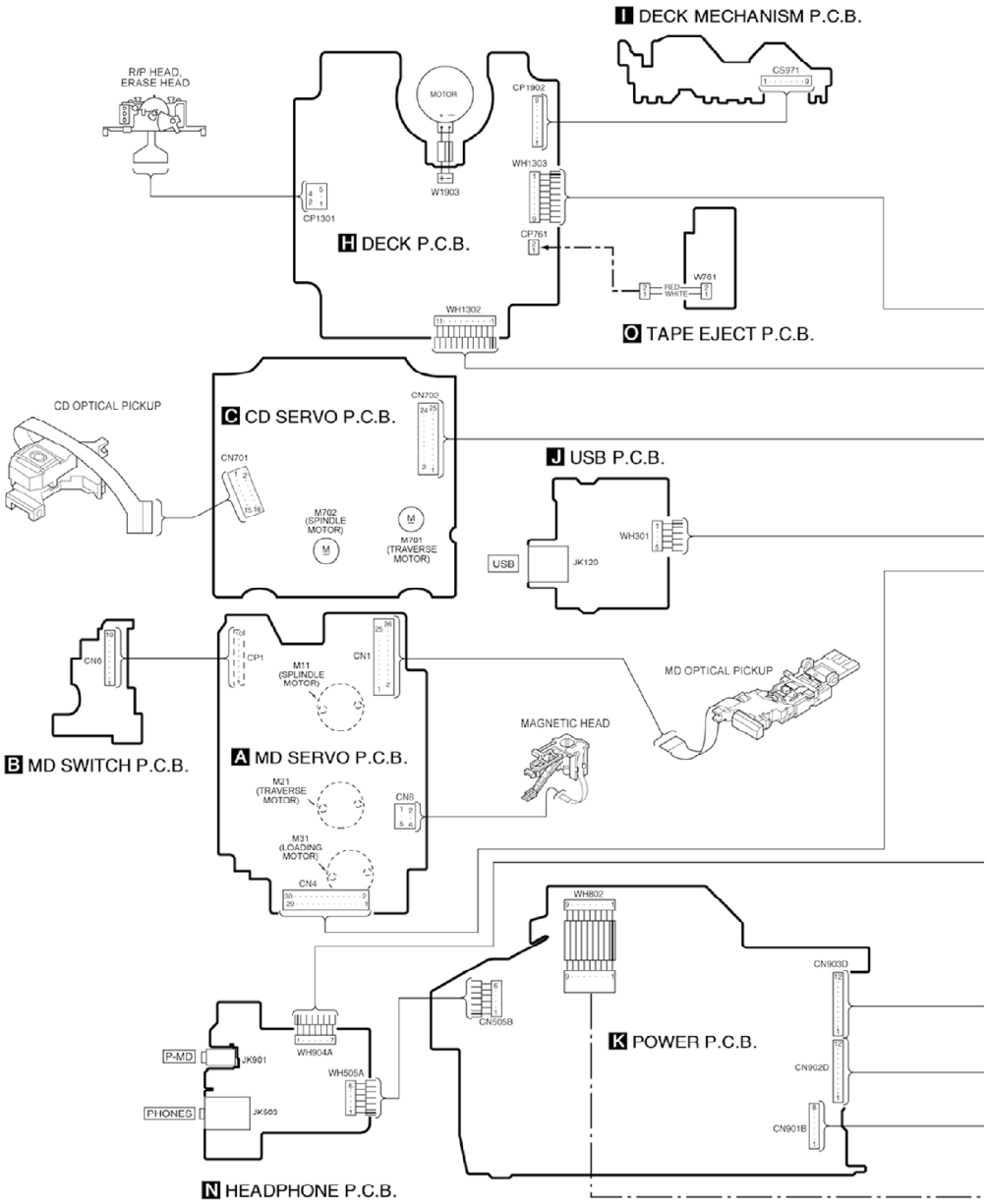
**Caution !**

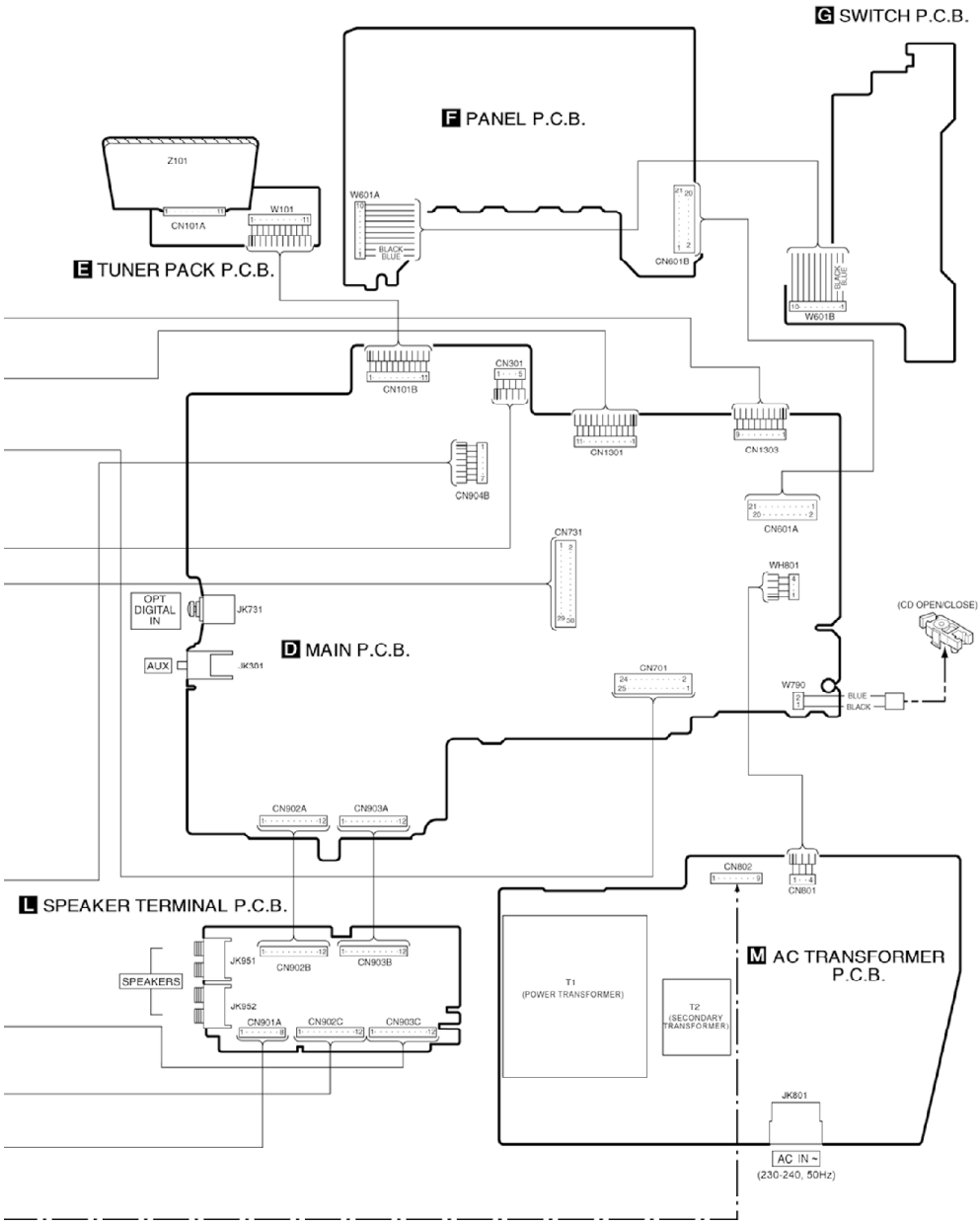
**IC, LSI and VLSI are sensitive to static electricity.**
**Secondary trouble can be prevented by taking care during repair.**

- **Cover the parts boxes made of plastics with aluminium foil.**
- **Put a conductive mat on the work table.**
- **Ground the soldering iron.**
- **Do not touch the pins of IC, LSI or VLSI with fingers directly.**

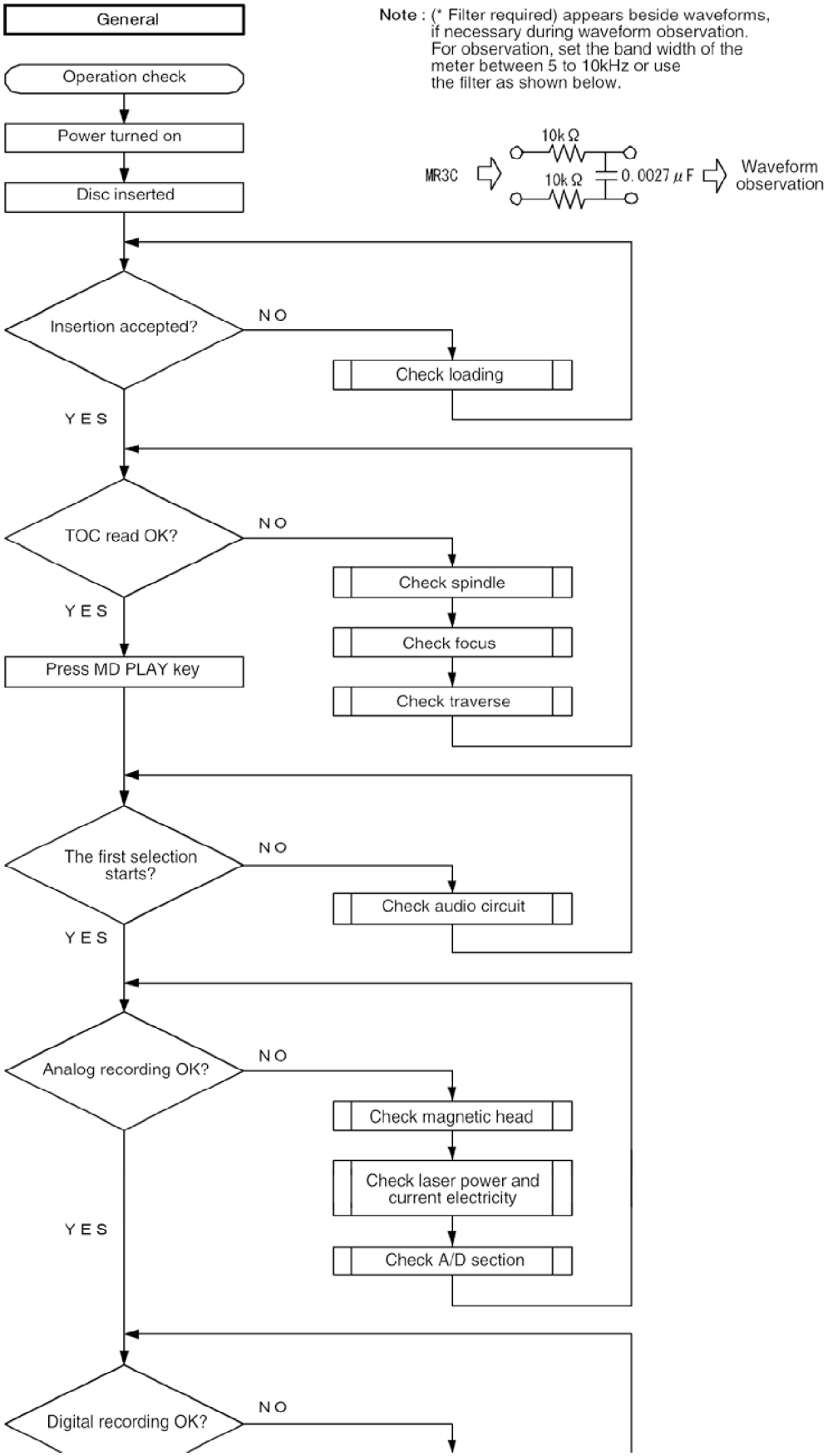
# 17. Printed Circuit Board

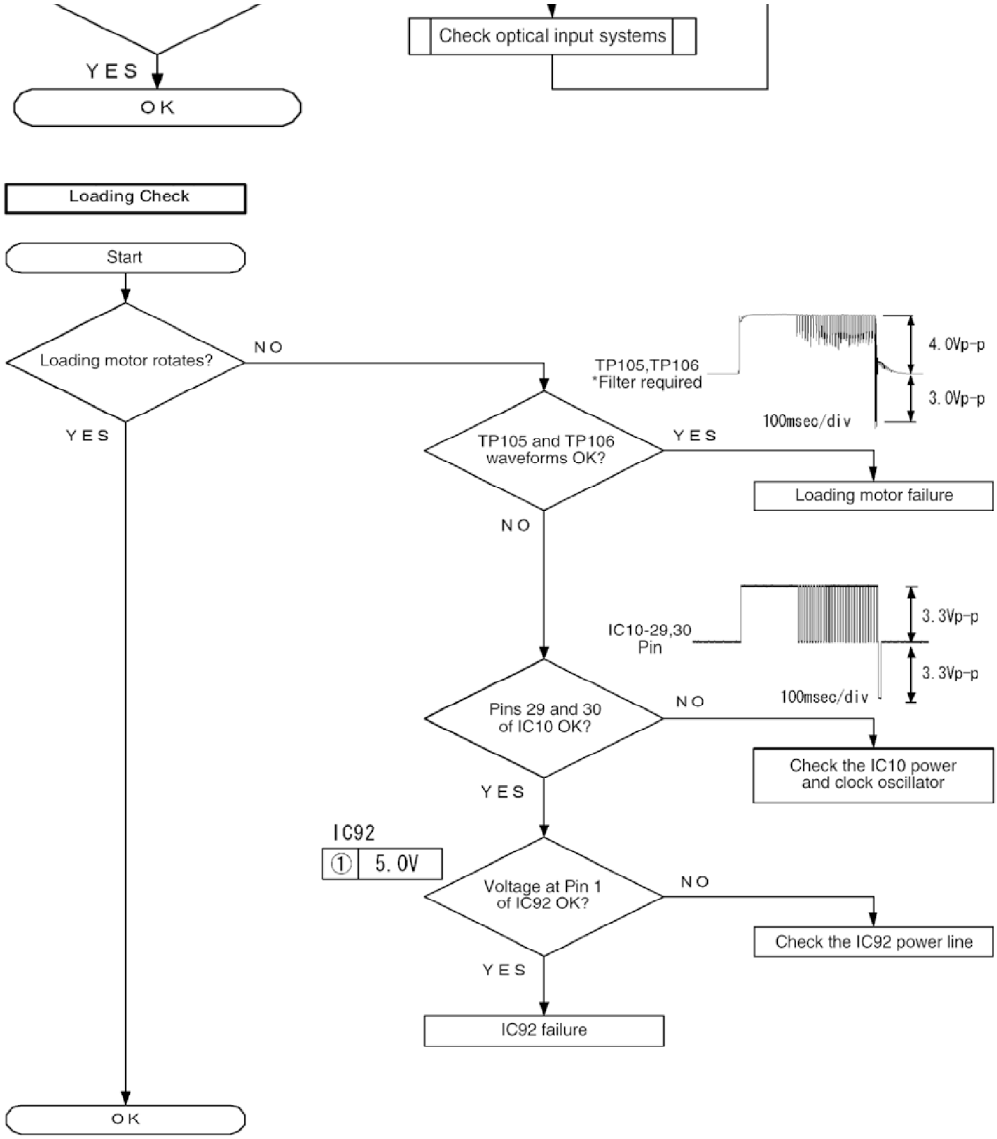
# 18. Wiring Connection Diagram

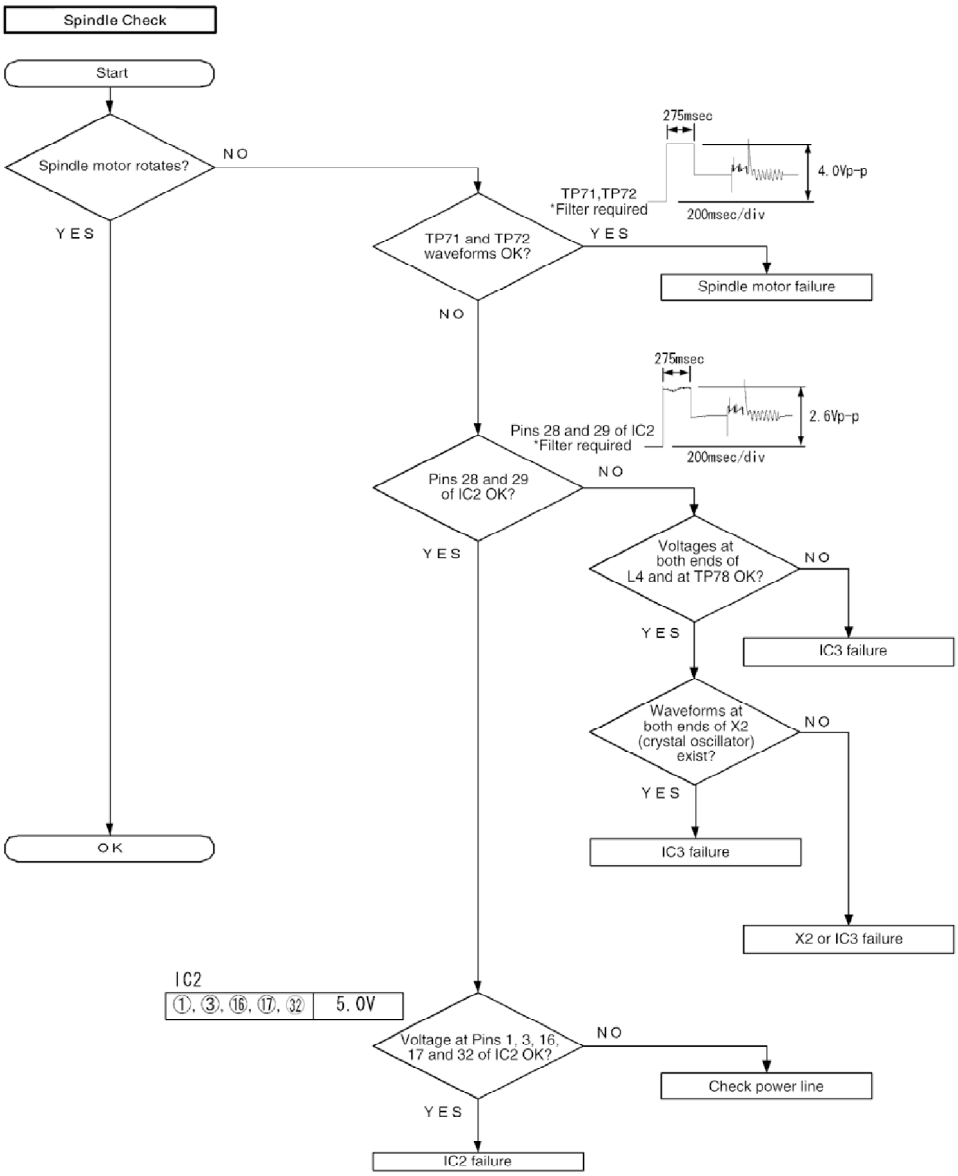

I DECK MECHANISM P.C.B.
CS971
R/P HEAD,
ERASE HEAD
MOTOR
CP1902
WH1303
W1903
CP1301
H DECK P.C.B.
CP761
W761
RED
WHITE
WH1302
O TAPE EJECT P.C.B.
CD OPTICAL PICKUP
C CD SERVO P.C.B.
CN702
CN701
J USB P.C.B.
M702
(SPINDLE
MOTOR)
M701
(TRAVERSE
MOTOR)
WH301
USB
JK120
CN6
CP1
M11
(SPLINDLE
MOTOR)
CN1
MD OPTICAL PICKUP
MAGNETIC HEAD
B MD SWITCH P.C.B.
A MD SERVO P.C.B.
M21
(TRAVERSE
MOTOR)
CN8
M31
(LOADING
MOTOR)
CN4
WH802
CN903D
CN505B
K POWER P.C.B.
WH904A
P-MD
JK901
WH505A
CN902D
PHONES
JK503
CN901B
N HEADPHONE P.C.B.

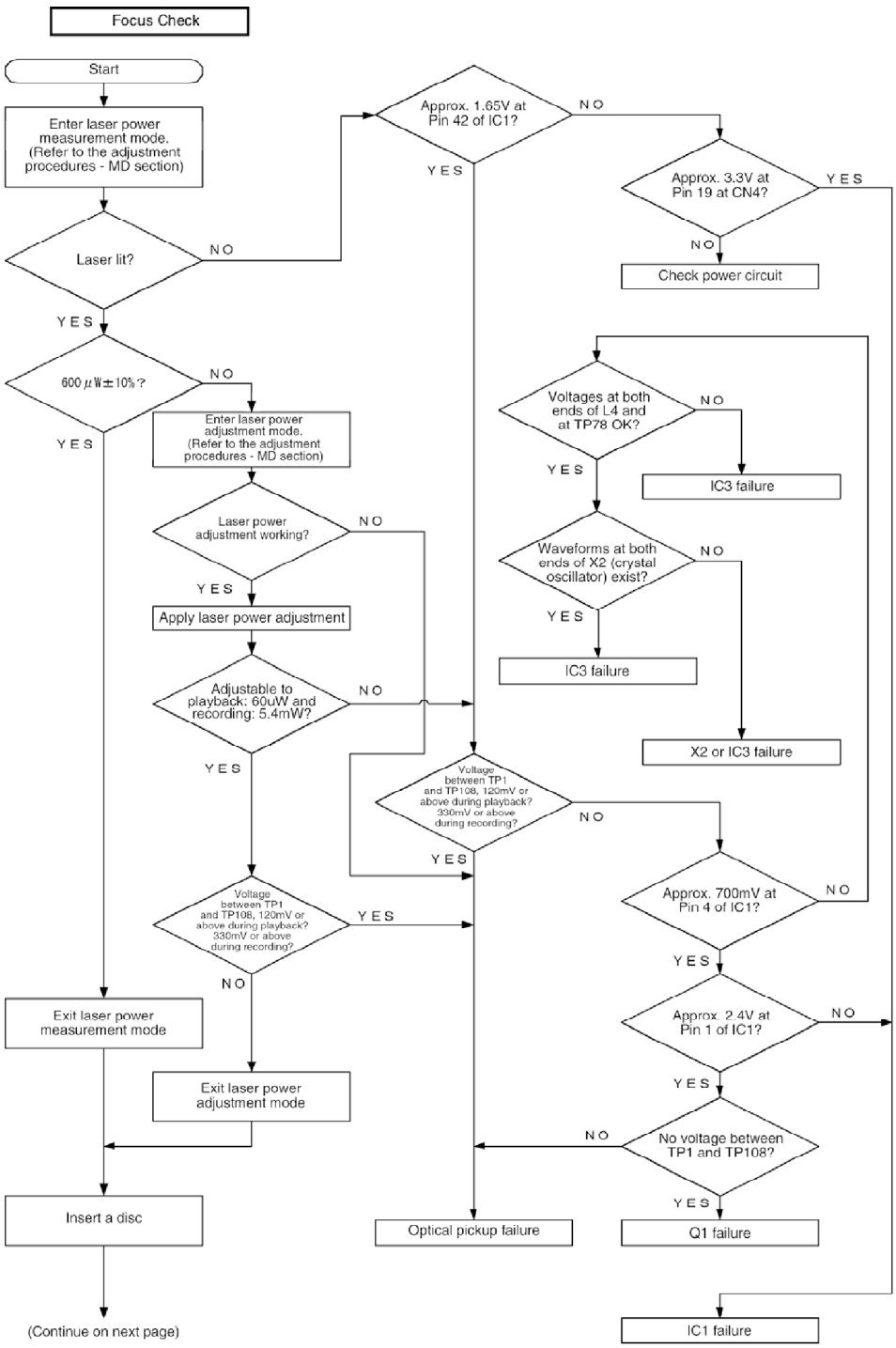


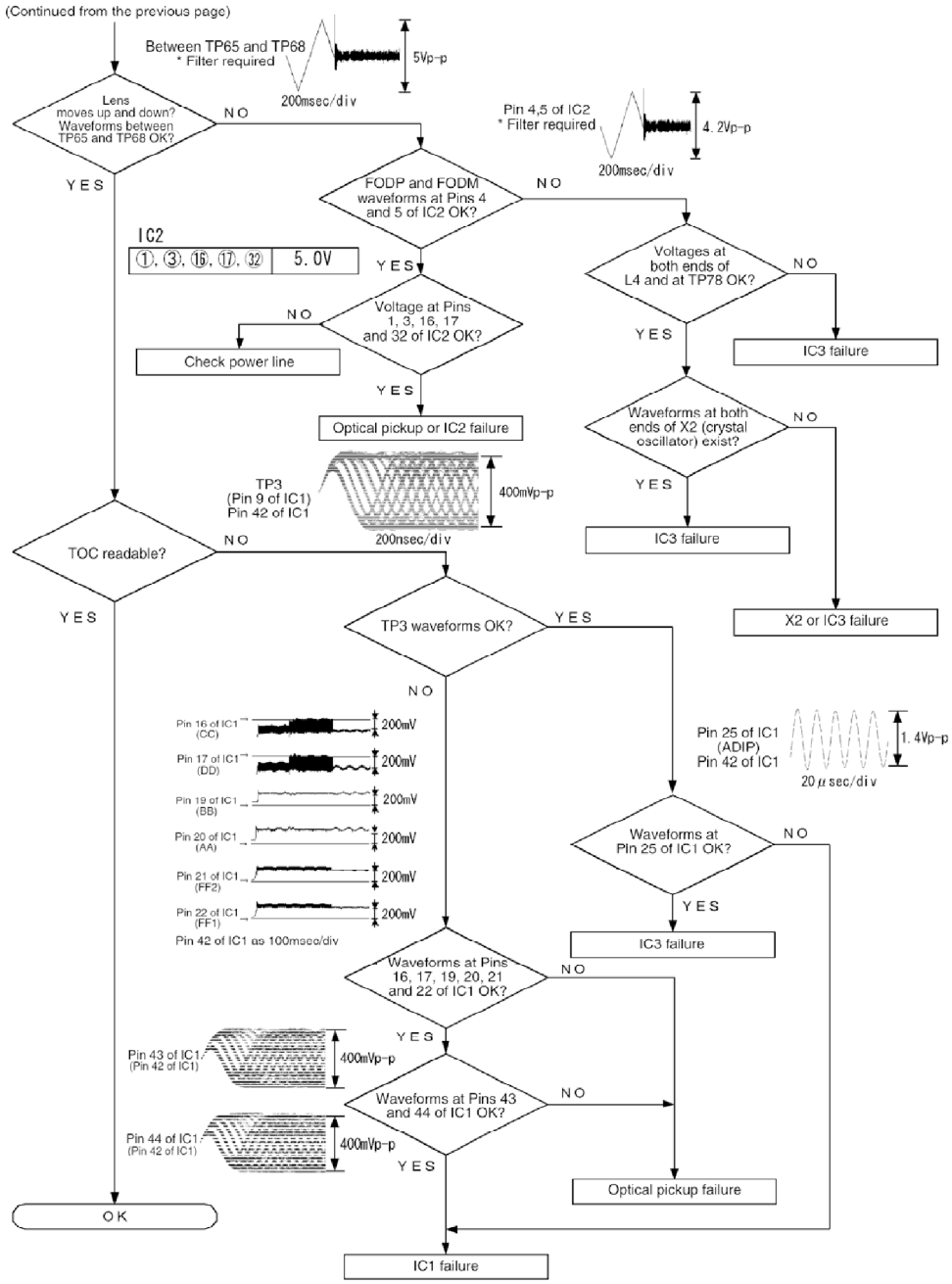

# 19. Troubleshooting (MD Section)

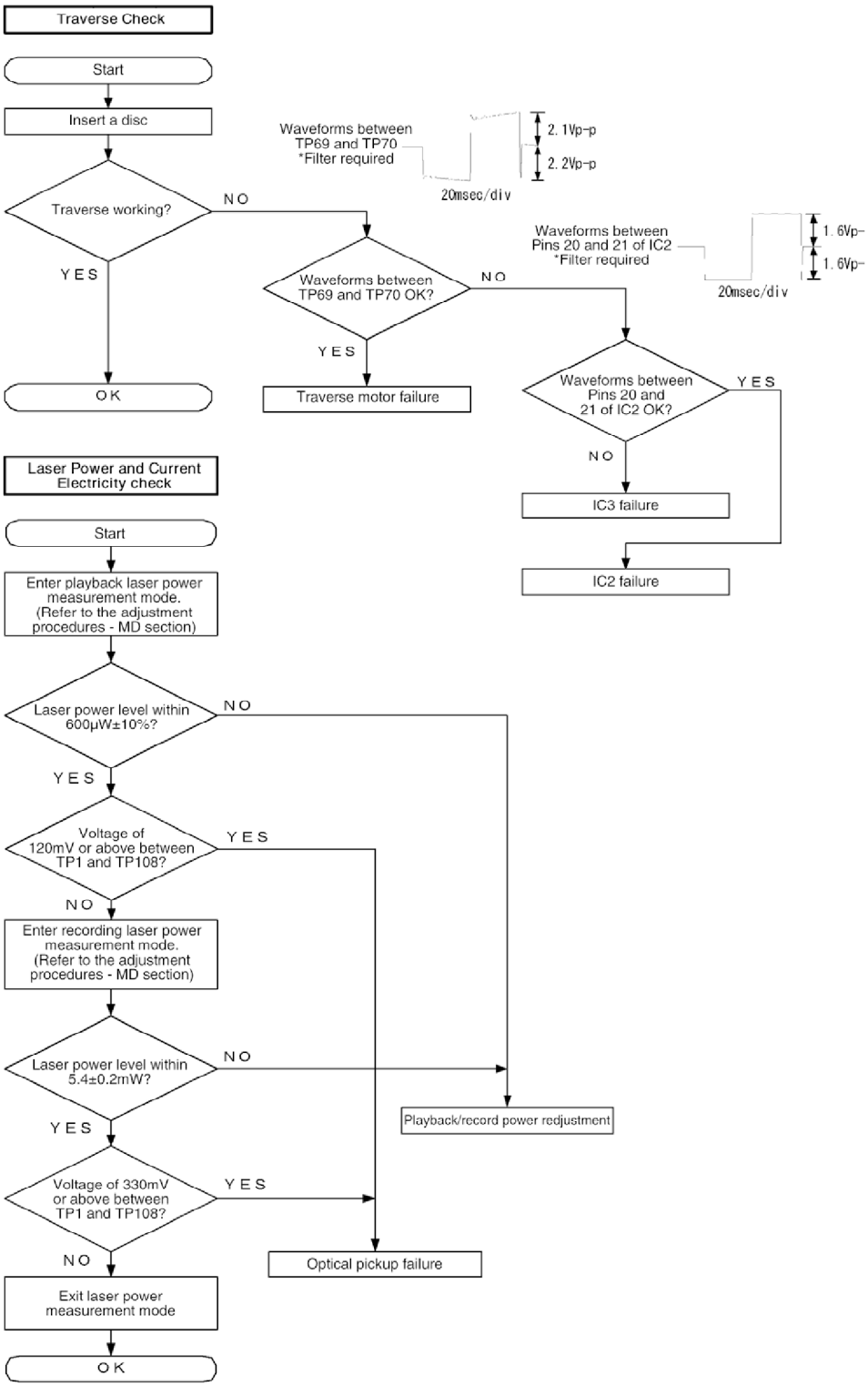

General
Operation check
Power turned on
Disc inserted
Insertion accepted?
NO
Check loading
YES
TOC read OK?
NO
Check spindle
Check focus
Check traverse
YES
Press MD PLAY key
The first selection starts?
NO
Check audio circuit
YES
Analog recording OK?
NO
Check magnetic head
Check laser power and current electricity
Check A/D section
YES
Digital recording OK?
NO
Note : (* Filter required) appears beside waveforms, if necessary during waveform observation. For observation, set the band width of the meter between 5 to 10kHz or use the filter as shown below.
MR30
10k Ω
10k Ω
0.0027 μF
Waveform observation

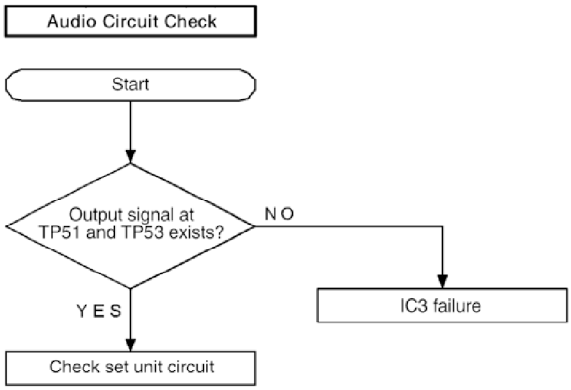

YES
OK
Check optical input systems
Loading Check
Start
Loading motor rotates?
NO
YES
TP105,TP106
*Filter required
4.0Vp-p
3.0Vp-p
100msec/div
TP105 and TP106
waveforms OK?
YES
Loading motor failure
NO
IC10-29,30
Pin
3.3Vp-p
3.3Vp-p
100msec/div
Pins 29 and 30
of IC10 OK?
NO
Check the IC10 power
and clock oscillator
YES
IC92
① 5.0V
Voltage at Pin 1
of IC92 OK?
NO
Check the IC92 power line
YES
IC92 failure
OK

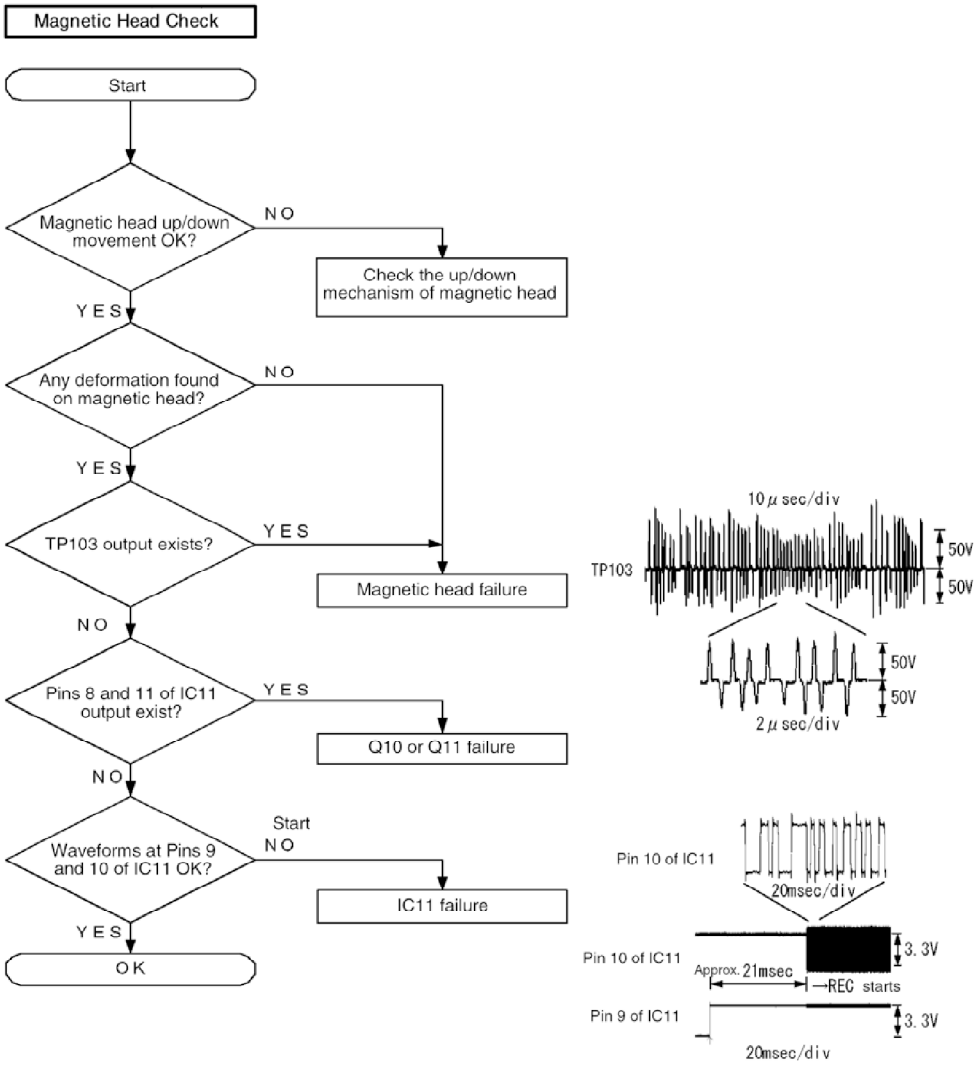

Spindle Check
Start
Spindle motor rotates?
NO
YES
OK
TP71 and TP72 waveforms OK?
YES
Spindle motor failure
NO
TP71,TP72
*Filter required
275msec
4.0Vp-p
200msec/div
Pins 28 and 29 of IC2 OK?
NO
YES
Pins 28 and 29 of IC2
*Filter required
275msec
2.6Vp-p
200msec/div
Voltages at both ends of L4 and at TP78 OK?
NO
YES
IC3 failure
Waveforms at both ends of X2 (crystal oscillator) exist?
NO
YES
IC3 failure
X2 or IC3 failure
IC2
①, ③, ⑯, ⑰, ㉜
5.0V
Voltage at Pins 1, 3, 16, 17 and 32 of IC2 OK?
NO
YES
Check power line
IC2 failure

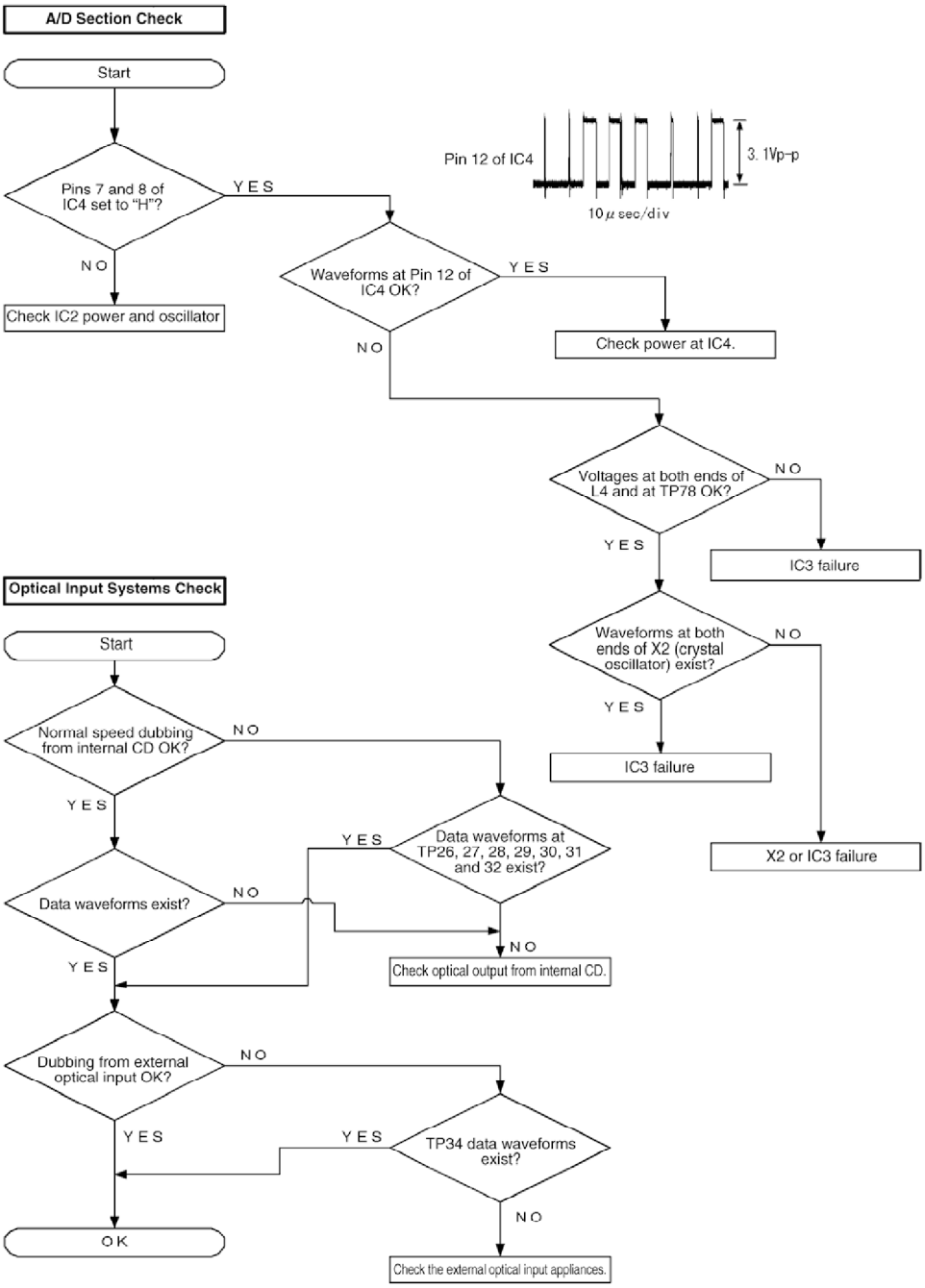

Focus Check
Start
Enter laser power measurement mode. (Refer to the adjustment procedures - MD section)
Laser lit?
NO
YES
600 μW±10%?
NO
YES
Enter laser power adjustment mode. (Refer to the adjustment procedures - MD section)
Laser power adjustment working?
NO
YES
Apply laser power adjustment
Adjustable to playback: 60uW and recording: 5.4mW?
NO
YES
Voltage between TP1 and TP108, 120mV or above during playback? 330mV or above during recording?
YES
NO
Exit laser power measurement mode
Exit laser power adjustment mode
Insert a disc
(Continue on next page)
Approx. 1.65V at Pin 42 of IC1?
NO
YES
Voltage between TP1 and TP108, 120mV or above during playback? 330mV or above during recording?
NO
YES
Optical pickup failure
Approx. 3.3V at Pin 19 at CN4?
YES
NO
Check power circuit
Voltages at both ends of L4 and at TP78 OK?
NO
YES
IC3 failure
Waveforms at both ends of X2 (crystal oscillator) exist?
NO
YES
IC3 failure
X2 or IC3 failure
Approx. 700mV at Pin 4 of IC1?
NO
YES
Approx. 2.4V at Pin 1 of IC1?
NO
YES
No voltage between TP1 and TP108?
NO
YES
Q1 failure
IC1 failure


(Continued from the previous page)
Between TP65 and TP68
* Filter required
5Vp-p
200msec/div
Lens moves up and down? Waveforms between TP65 and TP68 OK?
NO
YES
Pin 4,5 of IC2
* Filter required
4.2Vp-p
200msec/div
FODP and FODM waveforms at Pins 4 and 5 of IC2 OK?
NO
YES
IC2
①, ③, ⑯, ⑰, ㉜ 5.0V
Voltages at both ends of L4 and at TP78 OK?
NO
YES
IC3 failure
Voltage at Pins 1, 3, 16, 17 and 32 of IC2 OK?
NO
Check power line
YES
Optical pickup or IC2 failure
Waveforms at both ends of X2 (crystal oscillator) exist?
NO
YES
IC3 failure
TP3
(Pin 9 of IC1)
Pin 42 of IC1
400mVp-p
200nsec/div
TOC readable?
NO
YES
X2 or IC3 failure
TP3 waveforms OK?
YES
NO
Pin 16 of IC1 (CC) 200mV
Pin 17 of IC1 (DD) 200mV
Pin 19 of IC1 (BB) 200mV
Pin 20 of IC1 (AA) 200mV
Pin 21 of IC1 (FF2) 200mV
Pin 22 of IC1 (FF1) 200mV
Pin 42 of IC1 as 100msec/div
Pin 25 of IC1 (ADIP) Pin 42 of IC1
1.4Vp-p
20μsec/div
Waveforms at Pin 25 of IC1 OK?
NO
YES
IC3 failure
Waveforms at Pins 16, 17, 19, 20, 21 and 22 of IC1 OK?
NO
YES
Pin 43 of IC1 (Pin 42 of IC1)
400mVp-p
Waveforms at Pins 43 and 44 of IC1 OK?
NO
Pin 44 of IC1 (Pin 42 of IC1)
400mVp-p
YES
Optical pickup failure
OK
IC1 failure

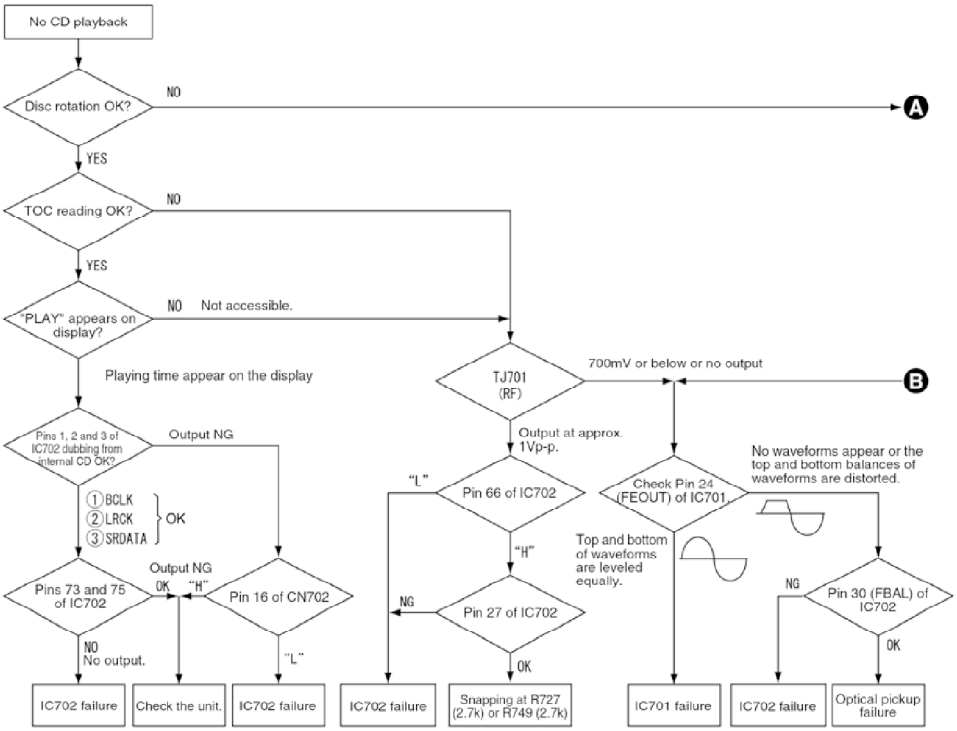

Traverse Check
Start
Insert a disc
Traverse working?
NO
YES
OK
Waveforms between TP69 and TP70 *Filter required
2.1Vp-p
2.2Vp-p
20msec/div
Waveforms between TP69 and TP70 OK?
NO
YES
Traverse motor failure
Waveforms between Pins 20 and 21 of IC2 *Filter required
1.6Vp-
1.6Vp-
20msec/div
Waveforms between Pins 20 and 21 of IC2 OK?
YES
NO
IC3 failure
IC2 failure
Laser Power and Current Electricity check
Start
Enter playback laser power measurement mode. (Refer to the adjustment procedures - MD section)
Laser power level within 600µW±10%?
NO
YES
Voltage of 120mV or above between TP1 and TP108?
YES
NO
Enter recording laser power measurement mode. (Refer to the adjustment procedures - MD section)
Laser power level within 5.4±0.2mW?
NO
YES
Playback/record power redjustment
Voltage of 330mV or above between TP1 and TP108?
YES
NO
Optical pickup failure
Exit laser power measurement mode
OK

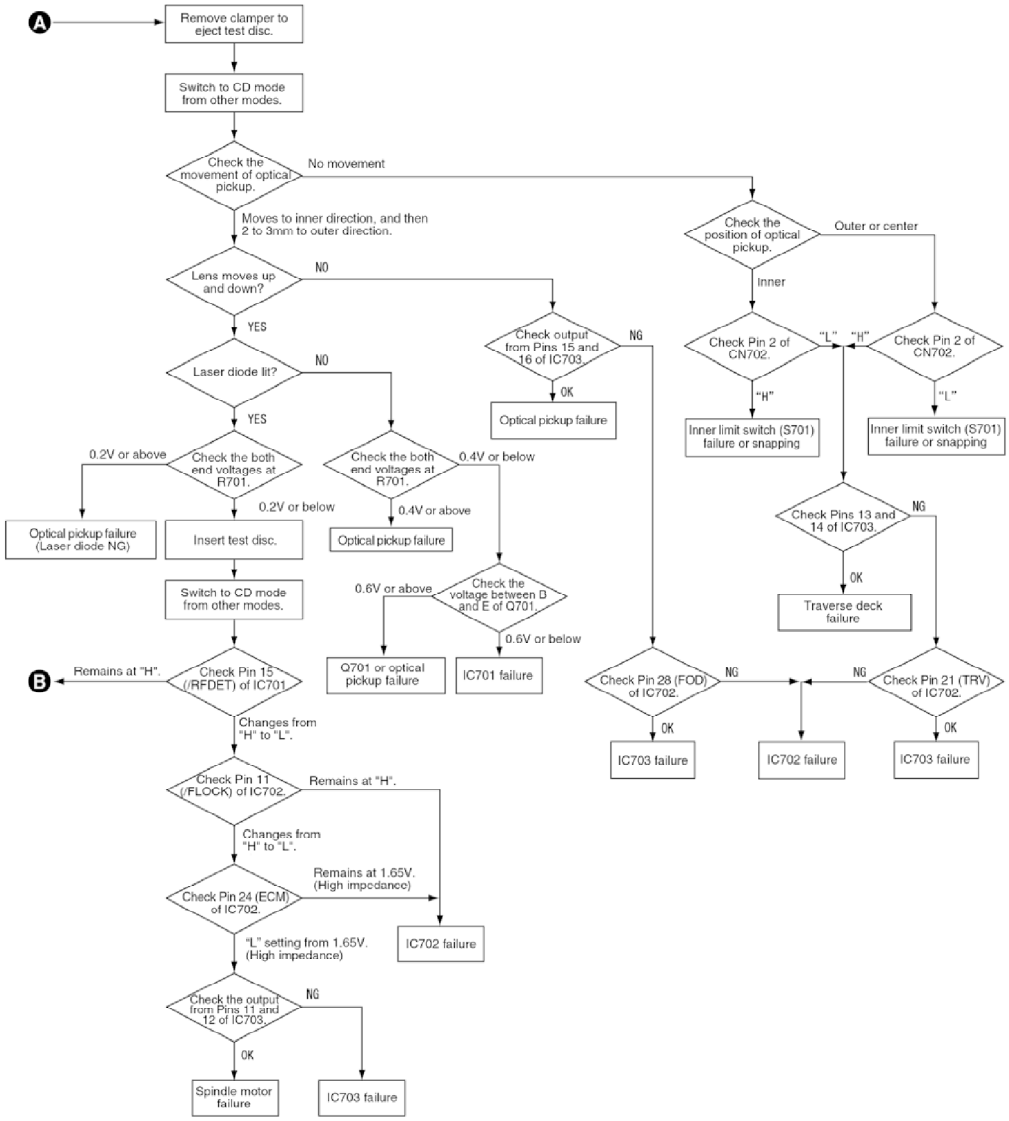

Audio Circuit Check
Start
Output signal at TP51 and TP53 exists?
NO
IC3 failure
YES
Check set unit circuit


Magnetic Head Check
Start
Magnetic head up/down movement OK?
NO
Check the up/down mechanism of magnetic head
YES
Any deformation found on magnetic head?
NO
YES
TP103 output exists?
YES
Magnetic head failure
NO
Pins 8 and 11 of IC11 output exist?
YES
Q10 or Q11 failure
NO
Start
Waveforms at Pins 9 and 10 of IC11 OK?
NO
IC11 failure
YES
OK
10μsec/div
TP103
50V
50V
50V
50V
2μsec/div
Pin 10 of IC11
20msec/div
Pin 10 of IC11
3.3V
Approx. 21msec
REC starts
Pin 9 of IC11
3.3V
20msec/div




# 20. Troubleshooting Flowchart (CD Section Circuit)


No CD playback
Disc rotation OK?
NO
A
YES
TOC reading OK?
NO
YES
"PLAY" appears on display?
NO
Not accessible.
Playing time appear on the display
TJ701 (RF)
700mV or below or no output
B
Output at approx. 1Vp-p.
Pins 1, 2 and 3 of IC702 dubbing from internal CD OK?
Output NG
①BCLK
②LRCK
③SRDATA
OK
"L"
Pin 66 of IC702
"H"
Check Pin 24 (FEOUT) of IC701
No waveforms appear or the top and bottom balances of waveforms are distorted.
Top and bottom of waveforms are leveled equally.
Pins 73 and 75 of IC702
Output NG
OK
"H"
Pin 16 of CN702
NG
Pin 27 of IC702
NG
Pin 30 (FBAL) of IC702
OK
NO
No output.
"L"
OK
IC702 failure
Check the unit.
IC702 failure
IC702 failure
Snapping at R727 (2.7k) or R749 (2.7k)
IC701 failure
IC702 failure
Optical pickup failure




# 21. Parts Location and Replacement Parts List

**Notes:**

**- Important safety notice:**

**Components identified by ⚠ mark have special characteristics important for safety.**

**Furthermore, special parts which have purposes of fire-retardent (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.**

**When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.**

**- The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)**

**Parts without these indications can be used for all areas.**

**- Warning: This product uses a laser diode. Refer to caution statements on page 5.**

**ACTUNG:**

**- Die Lasereinheit nicht zerlegen.**

**- Die Lasereinheit darf nur gegen eine vom Hertsteller spezifizierte Einheit ausgetauscht werden.**

**- Capacitor values are in microfarads ( μ F) unless specified otherwise, P= Pico-farads (pF), F= Farads.**

**- Resistance values are in ohms, unless specified otherwise, 1K= 1,000 (OHM).**

**- The marking (RTL) indicates that the Retention Time is limited for this items. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of a availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.**

**- [M] Indicates in the Remarks columns indicates parts supplied by MESA.**

**- The "(SF)" mark denotes the standard part.**

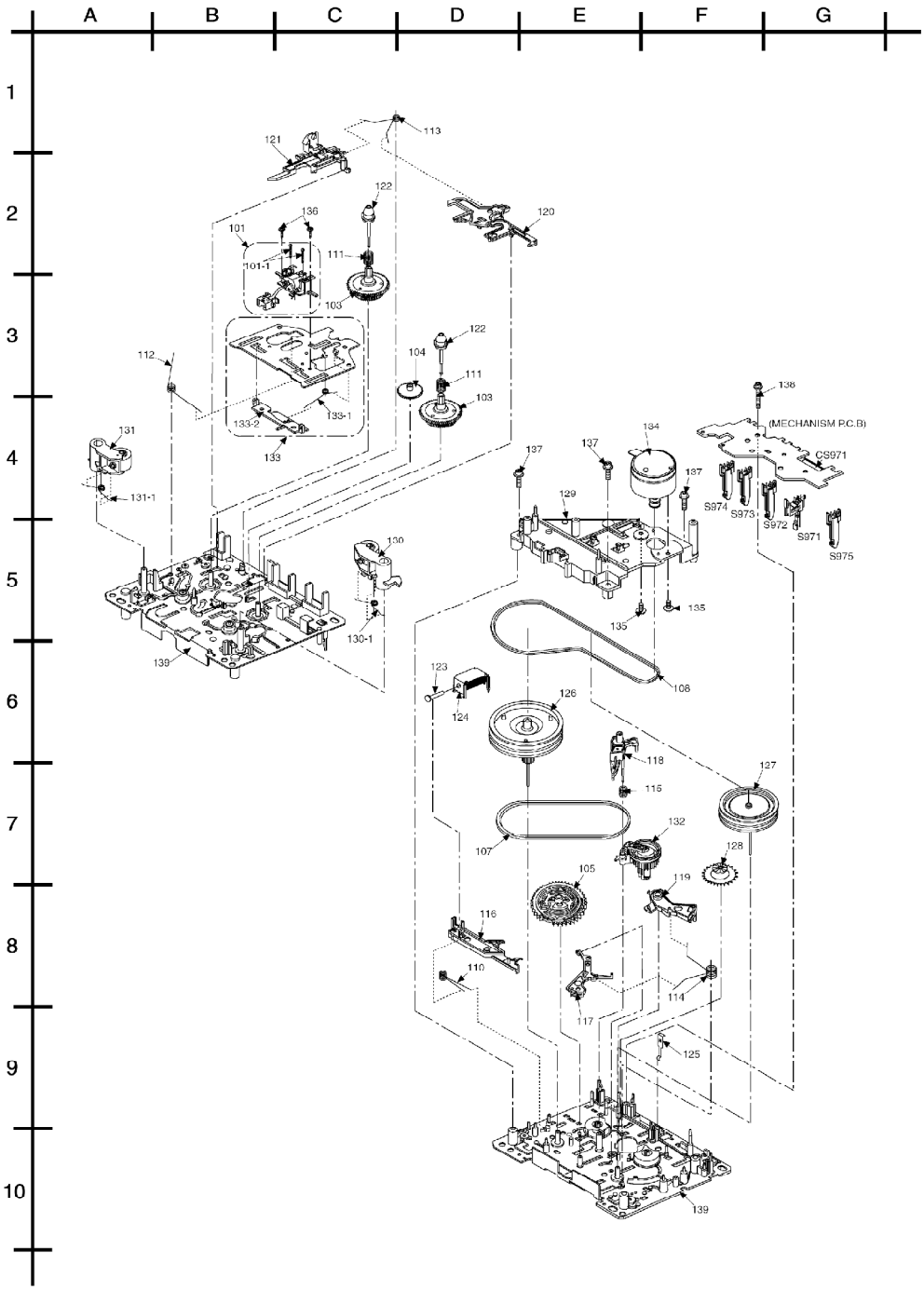
**- Remote Control Unit: Supply period for three years from terminal of production.**

**- Reference for O/I book languages are as follows:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Ar :** | **Arabic** | **Du :** | **Dutch** | **It :** | **Italian** | **Sp :** | **Spanish** |
| **Cf :** | **Canadian French** | **En :** | **English** | **Ko :** | **Korean** | **Sw :** | **Swedish** |
| **Cz :** | **Czech** | **Fr :** | **French** | **Po :** | **Polish** | **Co :** | **Traditio Chinese** |
| **Da :** | **Danish** | **Ge :** | **German** | **Ru :** | **Russian** | **Cn :** | **Simplifie Chinese** |

## 21.1. Deck Mechanism (RAA4106)

### 21.1.1. Deck Mechanism Parts Location

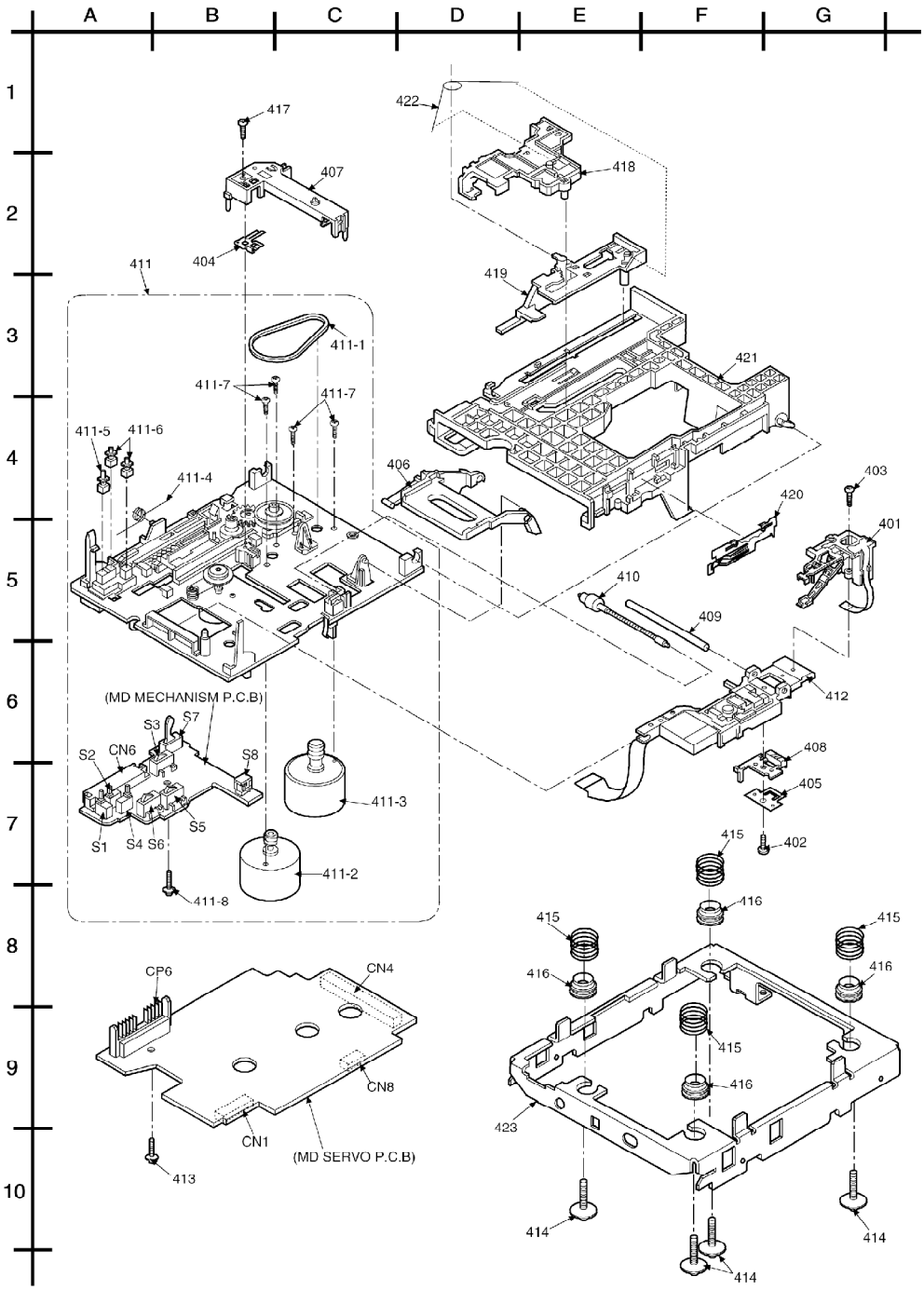



## 21.1.2. Deck Mechanism Parts List

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | CASSETTE DECK | |
| | | | |
| 101 | RED0043 | R/P HEAD BLOCK UNIT | [M] |
| 101-1 | RHD17015 | SCREW | [M] |
| 103 | RDG0300 | REEL BASE GEAR | [M] |
| 104 | RDG0301 | WINDING RELAY GEAR | [M] |
| 105 | RDK0026 | MAIN GEAR | [M] |
| 107 | RDV0033-4 | WINDING BELT | [M] |
| 108 | RDV0034-1 | CAPSTAN BELT 'A' | [M] |
| 110 | RMB0312 | TRIGGER LEVEL SPRING | [M] |
| 111 | RMB0400 | REEL SPRING | [M] |
| 112 | RMB0403 | HEAD PANEL SPRING | [M] |
| 113 | RMB0404 | BRAKE ROD SPRING | [M] |
| 114 | RMB0406 | FR LEVER SP | [M] |
| 115 | RMB0408 | THRUST SPRING | [M] |
| 116 | RML0370 | TRIGGER LEVER | [M] |
| 117 | RML0371 | FR LEVER | [M] |
| 118 | RML0372 | WINDING LEVER | [M] |
| 119 | RML0374 | EJECT LEVER | [M] |
| 120 | RMM0131 | BRAKE ROD | [M] |
| 121 | RMM0133-1 | EJECT ROD | [M] |
| 122 | RMQ0519 | REEL HUB | [M] |
| 123 | RMS0398-1 | MOVING CORE | [M] |
| 124 | RSJ0003 | PLUNGER | [M] |
| 125 | RMC0061 | PACK SPRING | [M] |
| 126 | RXF0049 | FLYWHEEL 'F' ASS'Y | [M] |
| 127 | RXF0050 | FLYWHEEL 'R' ASS'Y | [M] |
| 128 | RXG0040 | FF RELAY GEAR ASS'Y | [M] |
| 129 | RMK0283A-J | SUB CHASSIS | [M] |
| 130 | RXL0124 | PINCH ARM 'F' ASS'Y | [M] |
| 130-1 | RMB0401 | PINCH ARM SPRING 'F' | [M] |
| 131 | RXL0125 | PINCH ARM 'R' ASS'Y | [M] |
| 131-1 | RMB0402 | PINCH ARM SPRING 'R' | [M] |
| 132 | RXL0126 | WINDING ARM ASS'Y | [M] |
| 133 | RXQ0412 | HEAD PANEL ASS'Y | [M] |
| 133-1 | RMB0405 | FR ROD SPRING | [M] |
| 133-2 | RMM0132 | FR ROD | [M] |
| 134 | REM0098 | CAP MOTOR ASS'Y | [M] |
| 135 | RHD26022 | MOTOR SCREW | [M] |
| 136 | XTW2+5L | HEAD BLOCK UNIT SCREW | [M] |
| 137 | XTW26+10S | SUB-CHASSIS SCREW | [M] |
| 138 | XYC2+JF17 | PCB EARTH SCREW | [M] |
| 139 | RFKJSTR280PP | CHASSIS ASS'Y | [M] |

# 21.2. MD Mechanism

## 21.2.1. MD Mechanism Parts Location

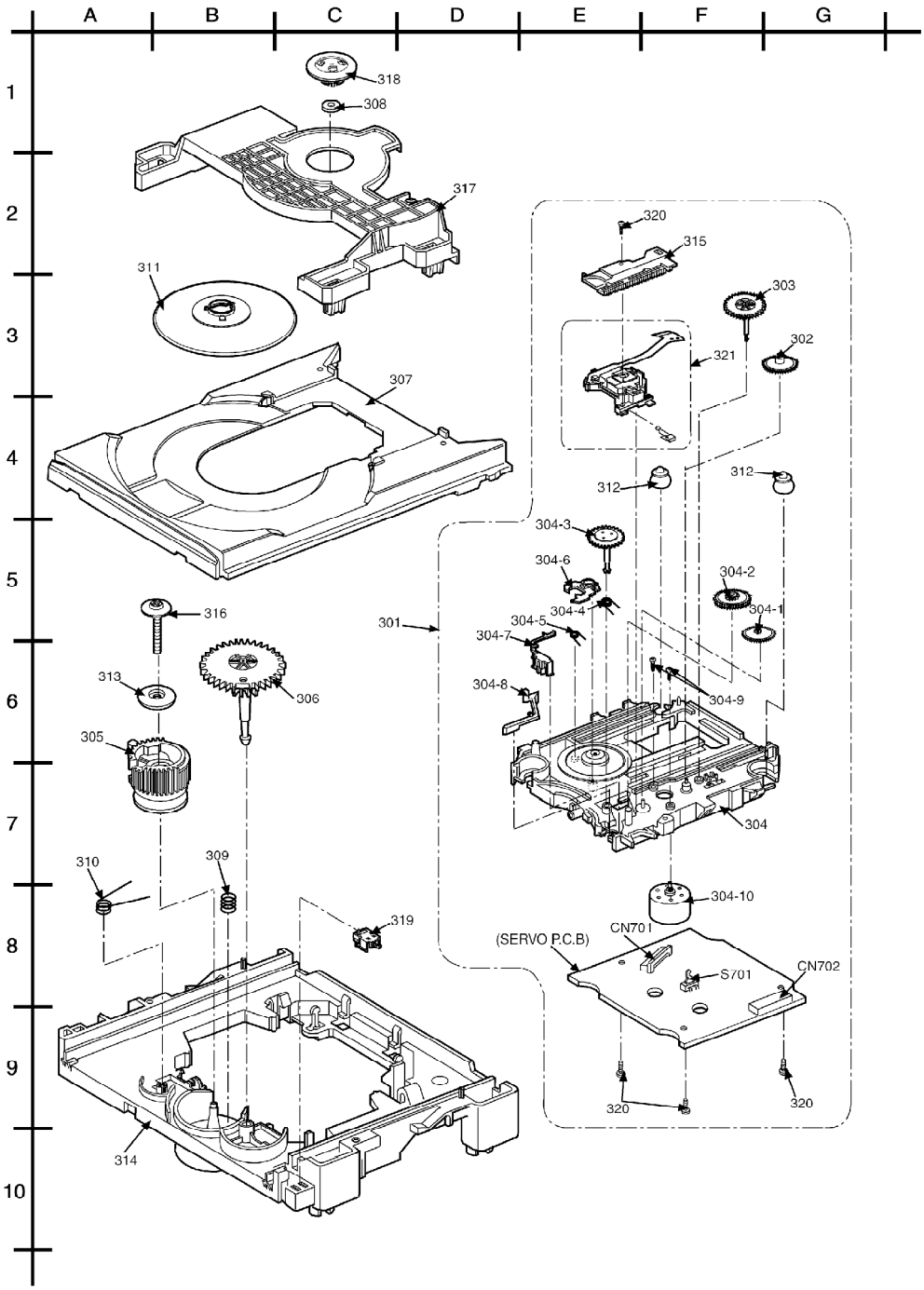



## 21.2.2. MD Mechanism Parts List

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | TRAVERSE DECK | |
| | | | |
| 401 | RED0047-2 | RECORDING HEAD | [M] |
| 402 | RHD17031 | NUT PLATE SCREW | [M] |
| 403 | RHD16025 | RECORDING HEAD SCREW | [M] |
| 404 | RMC0348 | THRUST SPRING | [M] |
| 405 | RMC0349 | NUT PLATE SPRING | [M] |
| 406 | RML0515 | HEAD SHIFTER | [M] |
| 407 | RMQ0750 | REF BASE | [M] |
| 408 | RMQ0751 | NUT PLATE | [M] |
| 409 | RMS0611 | MAIN SHAFT | [M] |
| 410 | RXJ0021 | DRIVE SHAFT ASS'Y | [M] |
| 411 | RXK0359 | MECHA CHASSIS UNIT | [M] |
| 411-1 | RDV0055-J | BELT | [M] |
| 411-2 | REM0077 | TRAVERSE MOTOR ASS'Y | [M] |
| 411-3 | REM0078 | LOADING MOTOR ASS'Y | [M] |
| 411-4 | RMB0548 | HOLDER SPRING | [M] |
| 411-5 | RMQ0752 | PIN A (BLACK) | [M] |
| 411-6 | RMQ0753 | PIN B (NATURAL) | [M] |
| 411-7 | XQN17+C25FZ | MOTOR SCREW | [M] |
| 411-8 | XYC2+FF105 | PCB SCREW | [M] |
| 412 | RAF1701A-2S | MD OPU | [M] |
| 413 | XTW2+6S | SCREW | [M] |
| 414 | RHD20053 | SCREW | [M] |
| 415 | RMB0504 | DAMPER SPRING | [M] |
| 416 | RMG0447-K2 | DAMPER | [M] |
| 417 | XTN17+6GFZ | REF. BASE SCREW | [M] |
| 418 | RML0514 | LOCK LEVER | [M] |
| 419 | RMM0199 | SLIDER | [M] |
| 420 | RMM0200 | SHUTTER OPENER | [M] |
| 421 | RMR1118-K2 | HOLDER | [M] |
| 422 | RMB0547-1 | LOCK LEVER SPRING | [M] |
| 423 | RMA1436 | MECAH BASE FRAME | [M] |

# 21.3. CD Loading Mechanism

## 21.3.1. CD Loading Mechanism Parts Location

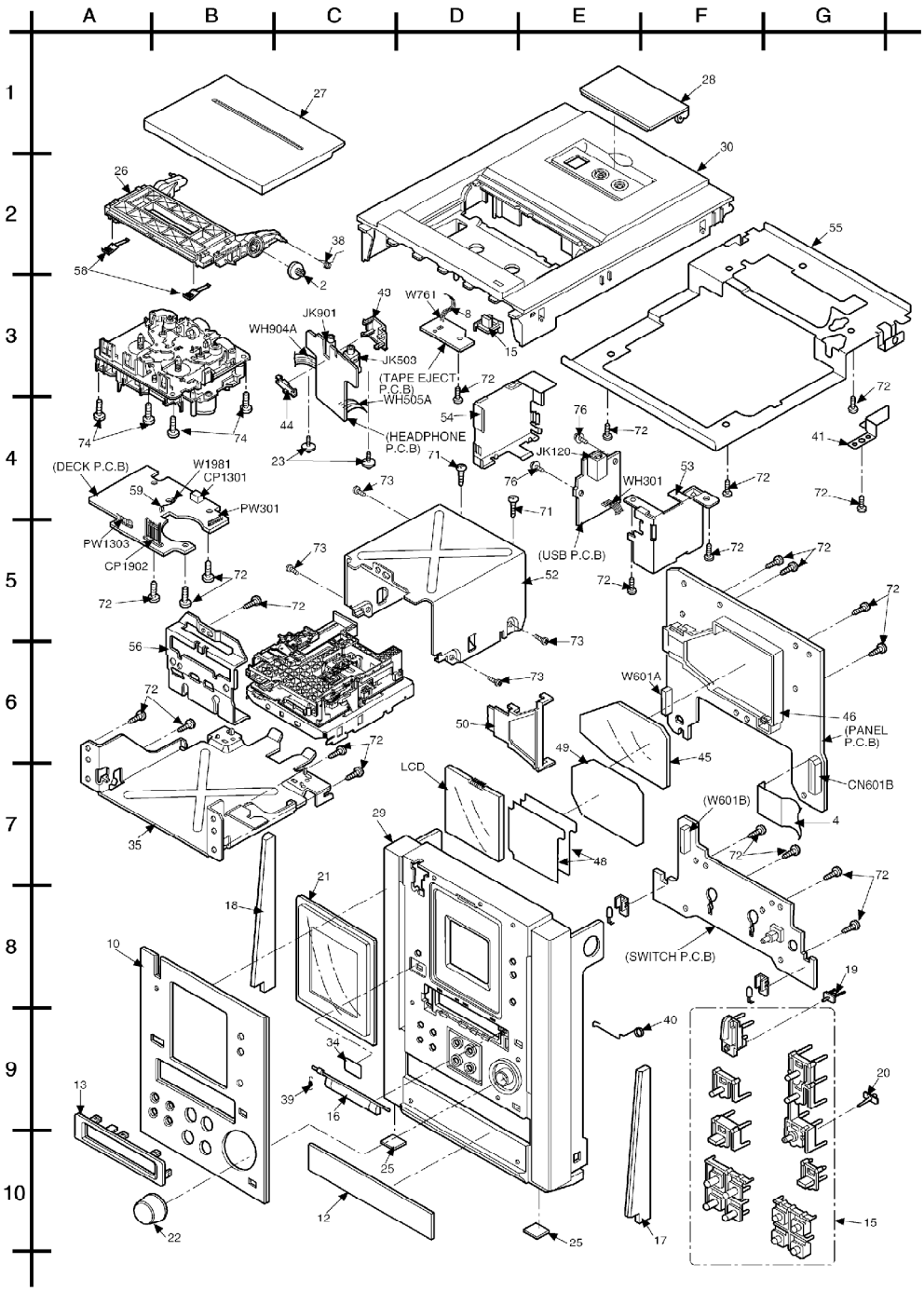



## 21.3.2. CD Mechanism Parts List

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | TRAVERSE DECK | |
| | | | |
| 301 | RAE0155Z-1V | CT100W TRAVERSE | [M] |
| 302 | RDG0455 | TRAVERSE GEAR (A) | [M] |
| 303 | RDG0456 | TRAVERSE GEAR (B) | [M] |
| 304 | RFKNCT100 | TRAVERSE BASE ASS'Y | [M] |
| 304-1 | RDG0457 | LOAD GEAR (A) | [M] |
| 304-10 | RXQ0632 | TRV MOTOR UNIT | [M] |
| 304-2 | RDG0458 | LOAD GEAR (B) | [M] |
| 304-3 | RDG0459 | LOAD GEAR (C) | [M] |
| 304-4 | RME0290 | PRESS SPRING | [M] |
| 304-5 | RME0291 | LOCK SPRING | [M] |
| 304-6 | RML0551 | TRG LEVER | [M] |
| 304-7 | RML0552 | LOCK LEVER | [M] |
| 304-8 | RMM0219 | STOPPER | [M] |
| 304-9 | XQN17+C28F | SCREW | [M] |
| 305 | RDG0460 | CAM GEAR | [M] |
| 306 | RDG0461 | DRIVE GEAR | [M] |
| 307 | RGQ0292-H | TRAY | [M] |
| 308 | RHM0001 | MAGNET | [M] |
| 309 | RMB0603 | FLOATING SPRING | [M] |
| 310 | RME0288 | CENTERING SPRING | [M] |
| 311 | RFKNXED50-S | CLAMPER HOLDER ASS'Y | [M] |
| 312 | RMG0510-K | FLOATING RUBBER (A) | [M] |
| 313 | RMG0511-K | FLOATING RUBBER (B) | [M] |
| 314 | RMK0422 | MECHA CHASSIS | [M] |
| 315 | RMM0218 | TRAVERSE DRIVE RACK | [M] |
| 316 | RHD30083 | CAM. GEAR SCREW | [M] |
| 317 | RMR1223-K | CLAMP PLATE | [M] |
| 318 | RMR1242-X1 | FIXTURE | [M] |
| 319 | RSH1A049-U | OPEN SWITCH | [M] |
| 320 | XTN2+6G | SCREW | [M] |
| 321 | RXQ0704 | OPU UNIT | [M] |

# 21.4. Cabinet

## 21.4.1. Cabinet Parts Location


A
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26
38
58
2
55
43
W761
8
15
JK901
WH904A
JK503
(TAPE EJECT P.C.B)
72
WH505A
54
76
72
41
74
74
44
23
(HEADPHONE P.C.B)
71
JK120
WH301
53
72
(DECK P.C.B)
W1981
CP1301
59
PW301
73
76
71
72
PW1303
CP1902
72
72
(USB P.C.B)
52
72
72
72
56
72
73
73
W601A
72
72
46
(PANEL P.C.B)
50
49
45
LCD
CN601B
(W601B)
4
72
29
48
35
21
72
18
(SWITCH P.C.B)
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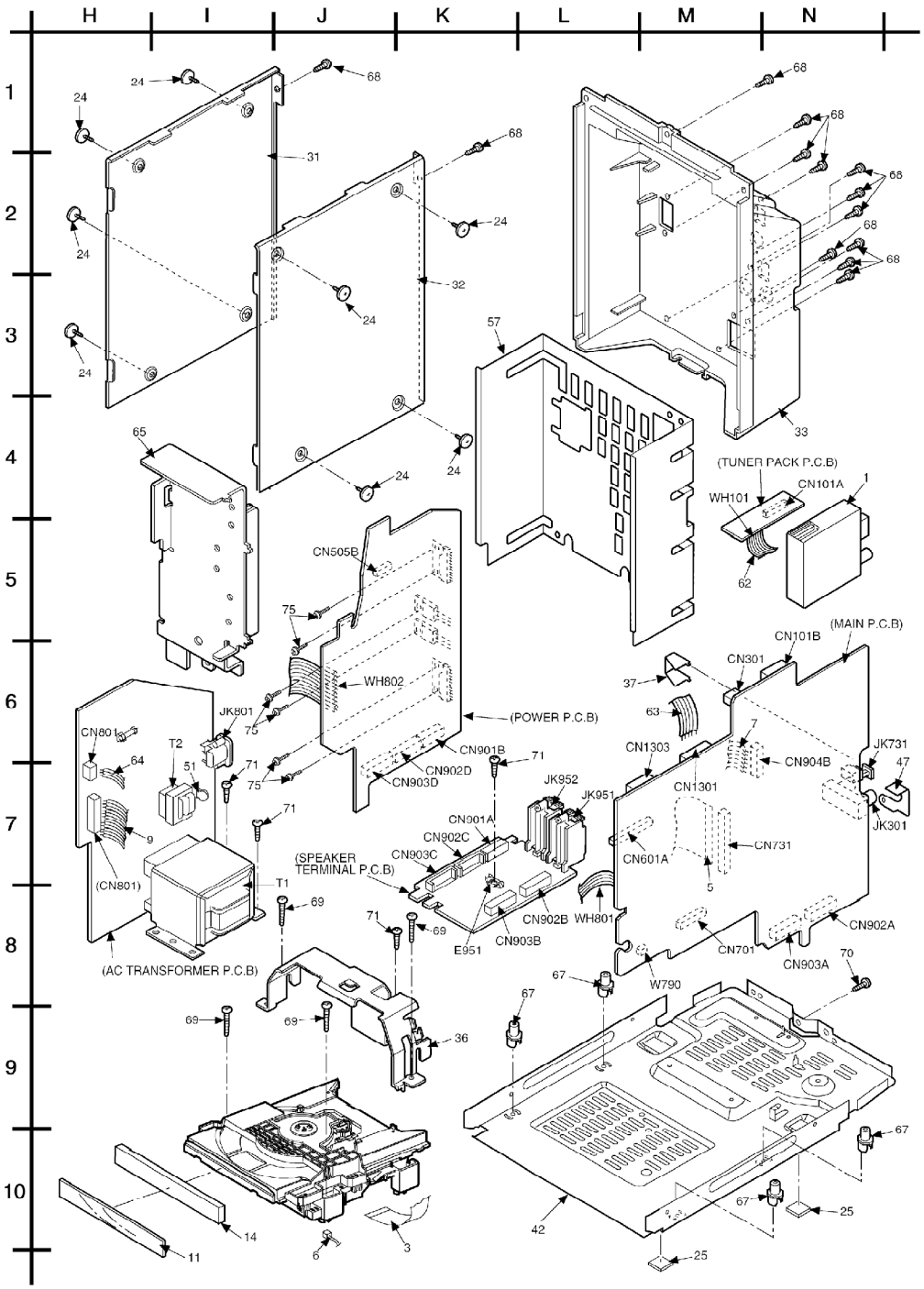



## 21.4.2. Cabinet Parts List

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | CABINET AND CHASSIS | |
| | | | |
| 1 | RAN0005EM-2 | TUNER PACK | [M] |
| 2 | RDG0357 | DUMPER GEAR | [M] |
| 3 | REE1109 | FFC WIRE | [M] |
| 4 | REE1110 | FFC WIRE | [M] |
| 5 | REE1146 | 30P FFC | [M] |
| 6 | REX1085 | 2P WIRE | [M] |
| 7 | REX1088 | WIRE | [M] |
| 8 | REX1089 | WIRE | [M] |
| 9 | REXX0232 | 9P TRANS TO POWER | [M] |
| 10 | RGK1400A-S | FRONT ORNAMENT | [M] |
| 11 | RGK1401-S | CD ORNAMENT | [M] |
| 12 | RGK1402-S | UNDER ORNAMENT | [M] |
| 13 | RGK1403-S | MD ORNAMENT | [M] |
| 14 | RGK1404-S | CD LID | [M] |
| 15 | RFKNAPM37MDE | FAMILY BUTTON ASS'Y | [M] |
| 16 | RGKX0063-1S | MD LID | [M] |
| 17 | RGL0554-Q | EDGE PANEL (L) | [M] |
| 18 | RGL0555-Q | EDGE PANEL (R) | [M] |
| 19 | RGL0556-Q | AC LIGHTING TIP | [M] |
| 20 | RGL0557-Q | REC LIGHTING TIP | [M] |
| 21 | RGP0874-A | LCD WINDOW | [M] |
| 22 | RGW0372-S | VOLUME KNOB | [M] |
| 23 | RHD26016 | SCREW (PHONE JACK) | [M] |
| 24 | RHD30007-S | SCREW | [M] |
| 25 | RHGV0008 | LEG CUSHION | [M] |
| 26 | RKF0479-1H | CASS HOLDER | [M] |
| 27 | RKF0622-S | CASS LID | [M] |
| 28 | RKF0623-S | JACK LID | [M] |
| 29 | RKM0443-S | FRONT PANEL | [M] |
| 30 | RKM0444-S | TOP CABINET | [M] |
| 31 | RKM0445-S | SIDE PANEL (L) | [M] |
| 32 | RKM0446-S | SIDE PANEL (R) | [M] |
| 33 | RFKHAPM37MDE | REAR COVER ASS'Y | [M] |
| 34 | RKW0655-S | SENSOR PANEL | [M] |
| 35 | RMA1458 | MD ANGLE | [M] |
| 36 | RMA1459-1 | MD MECHA SUPPORT | [M] |
| 37 | RMA1463 | OPTICAL JACK SUPPORT | [M] |
| 38 | RMB0617 | CASS OPEN SPRING | [M] |
| 39 | RMB0621 | MD LID SPRING | [M] |
| 40 | RMB0680 | EARTH SPRING | [M] |
| 41 | RMC0445 | JACK LID SPRING | [M] |
| 42 | RMK0498 | BOTTOM CHASSIS | [M] |
| 43 | RMN0566 | JACK HOLDER (A) | [M] |
| 44 | RMN0567 | JACK HOLDER (B) | [M] |
| 45 | RMN0654 | LCD HOLDER | [M] |
| 46 | RMN0655 | LED HOLDER | [M] |
| 47 | RMQ1077 | EARTH PLATE FOR AUX | [M] |
| 48 | RMR1381-W | DIFFUSER SHEET | [M] |
| 49 | RMR1382-Q | DIFFUSER PLATE | [M] |
| 50 | RMV0221 | LIGHTING COVER | [M] |
| 51 | RMZ0339 | ZENER COVER | [M] |
| 52 | RSC0588 | MD SHIELD | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 53 | RSC0592 | USB SHIELD (BOTTOM) | [M] |
| 54 | RSC0593 | USB SHIELD (UPPER) | [M] |
| 55 | RSC0594 | TOP SHIELD | [M] |
| 56 | RSC0606 | MD FRONT SHIELD | [M] |
| 57 | RSC0607 | REAR SHIELD | [M] |
| 58 | RUS757ZAA | CASS HALF SPRING | [M] |
| 59 | RWJ0102050KR | MOTOR WIRE | [M] |
| 62 | RWJ1111110QX | WIRE | [M] |
| 63 | RWJ1111205QX | WIRE | [M] |
| 64 | RWJ1804250QX | 4P TRANS TO MAIN | [M] |
| 65 | RXX0242 | COMPLETE HEATSINK | [M] |
| 67 | SHE187-4J | POWER PCB SUPPORT | [M] |
| 68 | XTB3+10JFZ | SCREW | [M] |
| 69 | XTB3+20JFZ | SCREW | [M] |
| 70 | XTB3+8JFR1 | SCREW | [M] |
| 71 | XTB3+8JFZ | SCREW | [M] |
| 72 | XTBS26+10J | SCREW | [M] |
| 73 | XTV26+4F | SCREW | [M] |
| 74 | XTV3+10G | SCREW | [M] |
| 75 | XTV3+8F | SCREW | [M] |
| 76 | XYA3+FJ10 | SCREW | [M] |

## 21.5. Components Part list

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | PRINTED CIRCUIT BOARD | |
| | | | |
| | REP2807G | CD SERVO P.C.B. | [M] |
| | REP3200A-2N | MD SERVO P.C.B. | [M] |
| | REP3209A | MD SWITCH P.C.B. | [M] |
| | REP3192D | MAIN P.C.B. | [M] |
| | REP3192D | TUNER PACK P.C.B. | [M] |
| | REP3193B | SPEAKER TERMINAL P.C.B. | [M] |
| | REP3193B | TAPE EJECT P.C.B. | [M] |
| | REP3193B | DECK P.C.B. | [M] |
| | REP3193B | POWER P.C.B. | [M] |
| | REP3193B | AC TRANSFORMER P.C.B. | [M] |
| | REP3193B | HEADPHONE P.C.B. | [M] |
| | REP3194D | SWITCH P.C.B. | [M] |
| | REP3194D | PANEL P.C.B. | [M] |
| | REP3195A | USB P.C.B. | [M] |
| | REPX0108 | DECK MECHANISM P.C.B. | [M] |
| | | | |
| | | INTEGRATED CIRCUITS | |
| | | | |
| IC1 | AN22010A-VF | IC RF | [M] |
| IC2 | AN8496SA-E1V | IC 4CH DRIVER | [M] |
| IC3 | MN66621ARG | IC LSI | [M] |
| IC4 | AK4518VF-E2 | IC AD/DAIC | [M] |
| IC5 | RN5RG33AA-TL | IC REGULATOR | [M] ⚠ |
| IC10 | MN101C61GAA | IC U-COM | [M] |
| IC11 | TC74HCT00AFL | IC | [M] |
| IC12 | AK93C45BH-L | IC EEPROM | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| IC72 | C3ABKB000041 | IC 4M DRAM | [M] |
| IC92 | LB1830MS-TLM | IC MOTOR DR | [M] |
| IC120 | C1BB00000616 | IC USB DAC | [M] |
| IC121 | NJM2115V-TE1 | IC OP-AMP | [M] |
| IC151 | C1BB00000527 | IC RDS | [M] |
| IC301 | BD3861FS-E2 | IC AUDIO | [M] |
| IC302 | TC4052BFNELM | IC CMOS SWITCH | [M] |
| IC304 | C0DBZHC00008 | IC REGULATOR | [M] ⚠ |
| IC501 | TC74HCT7007A | IC 3V TO 5V | [M] |
| IC502 | MN101C49KCB1 | IC MICRO P | [M] |
| IC601 | XC62CP3302TH | IC 3V REGULATOR | [M] ⚠ |
| IC701 | AN8885SBE1 | IC HEAD AMP | [M] |
| IC701 | C0JBAZ001800 | IC HEX BUFFER | [M] |
| IC702 | MN662790RSC | IC LSI | [M] |
| IC702 | UPC29M33HF | IC | [M] ⚠ |
| IC703 | BA5948FPE2 | IC 4 CH DRIVE | [M] |
| IC703 | TC74HC4050EL | IC 3V TO 5V | [M] |
| IC732 | XC62CP3302TH | IC 3V REGULATOR | [M] ⚠ |
| IC901 | AN7194K-LD | IC BTC POWER | [M] |
| IC902 | AN7135 | IC POWER AMP | [M] |
| IC971 | 0N2180RLC1 | PHOTO INTERUPTOR | [M] |
| IC1000 | BA7755A | IC ANALOG SW | [M] |
| IC1001 | AN7326K | IC DECK R/P | [M] |
| | | | |
| | | TRANSISTORS | |
| | | | |
| Q1 | 2SB1462STX | TRANSISTOR | [M] |
| Q2 | 2SD2216STX | TRANSISTOR | [M] |
| Q3 | 2SD2216STX | TRANSISTOR | [M] |
| Q4 | 2SB1121ST-TD | TRANSISTOR | [M] ⚠ |
| Q10 | 2SJ278MYTR | TRANSISTOR | [M] |
| Q11 | 2SK1764KYTR | TRANSISTOR | [M] |
| Q151 | KTA1504GRTA | TRANSISTOR | [M] |
| Q152 | KRC102STA | TRANSISTOR | [M] |
| Q153 | KRC102STA | TRANSISTOR | [M] |
| Q202 | KTC3875GRTA | TRANSISTOR | [M] |
| Q203 | KTC3875GRTA | TRANSISTOR | [M] |
| Q301 | KRC102STA | TRANSISTOR | [M] |
| Q302 | 2SJ498CTA | TRANSISTOR | [M] |
| Q303 | KTC3875GRTA | TRANSISTOR | [M] |
| Q304 | KTC3875GRTA | TRANSISTOR | [M] |
| Q306 | KRC102STA | TRANSISTOR | [M] |
| Q402 | KTC3875GRTA | TRANSISTOR | [M] |
| Q403 | KTC3875GRTA | TRANSISTOR | [M] |
| Q501 | KRC102STA | TRANSISTOR | [M] |
| Q502 | KRC104STA | TRANSISTOR | [M] |
| Q632 | KTC3199GRTA | TRANSISTOR | [M] |
| Q634 | KTC3199GRTA | TRANSISTOR | [M] |
| Q635 | 2SA933ASTA | TRANSISTOR | [M] |
| Q637 | KTC3199GRTA | TRANSISTOR | [M] |
| Q638 | 2SA933ASTA | TRANSISTOR | [M] |
| Q701 | 2SA1037AKSTX | TRANSISTOR | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| Q701 | KTA1504GRTA | TRANSISTOR | [M] |
| Q702 | DTC143XKA146 | TRANSISTOR | [M] |
| Q702 | KTC3875GRTA | TRANSISTOR | [M] |
| Q703 | DTA143XKA146 | TRANSISTOR | [M] |
| Q731 | KTA1504GRTA | TRANSISTOR | [M] |
| Q732 | KRC102STA | TRANSISTOR | [M] |
| Q761 | KTC3875GRTA | TRANSISTOR | [M] |
| Q801 | KTC3199GRTA | TRANSISTOR | [M] |
| Q803 | KTC2026 | TRANSISTOR | [M] ⚠ |
| Q804 | KRC102MTA | TRANSISTOR | [M] |
| Q805 | KRC101MTA | TRANSISTOR | [M] |
| Q806 | KTC3199GRTA | TRANSISTOR | [M] |
| Q807 | KTC3199GRTA | TRANSISTOR | [M] |
| Q808 | KTA1046 | TRANSISTOR | [M] ⚠ |
| Q809 | KTA1046 | TRANSISTOR | [M] ⚠ |
| Q813 | KTC3199GRTA | TRANSISTOR | [M] |
| Q814 | KTC3199GRTA | TRANSISTOR | [M] |
| Q816 | 2SD592ARTA | TRANSISTOR | [M] ⚠ |
| Q817 | KRA110MTA | TRANSISTOR | [M] |
| Q818 | KTA1046 | TRANSISTOR | [M] ⚠ |
| Q901 | 2SD2144STA | TRANSISTOR | [M] |
| Q902 | 2SD2144STA | TRANSISTOR | [M] |
| Q903 | KRA102MTA | TRANSISTOR | [M] |
| Q911 | KTC3875GRTA | TRANSISTOR | [M] |
| Q912 | KTC3199GRTA | TRANSISTOR | [M] |
| Q913 | 2SA933ASTA | TRANSISTOR | [M] |
| Q914 | KTC3199GRTA | TRANSISTOR | [M] |
| Q1102 | 2SJ498DTA | TRANSISTOR | [M] |
| Q1202 | 2SJ498DTA | TRANSISTOR | [M] |
| Q1301 | KRC111MTA | TRANSISTOR | [M] |
| Q1303 | KRC119MTA | TRANSISTOR | [M] |
| Q1304 | KRA102MTA | TRANSISTOR | [M] |
| Q1305 | KRC102MTA | TRANSISTOR | [M] |
| Q1306 | KTC3199GRTA | TRANSISTOR | [M] |
| Q1307 | KTC3199GRTA | TRANSISTOR | [M] |
| Q1308 | KRC114MTA | TRANSISTOR | [M] |
| Q1309 | 2SD2144STA | TRANSISTOR | [M] |
| Q1310 | 2SD2144STA | TRANSISTOR | [M] |
| Q1312 | KTC3199GRTA | TRANSISTOR | [M] |
| Q1313 | 2SC1845FTA | TRANSISTOR | [M] |
| Q1314 | KTC3199GRTA | TRANSISTOR | [M] |
| Q1315 | KTA12710YTA | TRANSISTOR | [M] |
| Q1316 | 2SD965RTA | TRANSISTOR | [M] |
| Q1317 | 2SD2144STA | TRANSISTOR | [M] |
| Q1321 | KRC119MTA | TRANSISTOR | [M] |
| Q1322 | KRA102MTA | TRANSISTOR | [M] |
| | | | |
| | | DIODES | |
| | | | |
| D5 | SC80209TE12R | DIODE | [M] |
| D6 | SC80209TE12R | DIODE | [M] |
| D9 | MA728TX | DIODE | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D120 | UDZTE173R9B | DIODE | [M] |
| D121 | 1SS355TE17 | DIODE | [M] |
| D124 | UDZSTE178R2B | DIODE | [M] |
| D126 | UDZSTE178R2B | DIODE | [M] |
| D127 | UDZSTE178R2B | DIODE | [M] |
| D151 | UDZSTE175R1B | DIODE | [M] |
| D301 | 1SS355TE17 | DIODE | [M] |
| D305 | DAP202KT146 | DIODE | [M] |
| D306 | DAP202KT146 | DIODE | [M] |
| D501 | 1SS355TE17 | DIODE | [M] |
| D502 | 1SS380TE-17 | DIODE | [M] |
| D503 | 1SS380TE-17 | DIODE | [M] |
| D504 | 1SS355TE17 | DIODE | [M] |
| D505 | 1SS380TE-17 | DIODE | [M] |
| D506 | 1SS380TE-17 | DIODE | [M] |
| D507 | RB715FT106 | DIODE | [M] |
| D630 | LNJ301MPUJAD | DIODE | [M] |
| D632 | RVD1SS133TA | DIODE | [M] |
| D633 | RVD1SS133TA | DIODE | [M] |
| D636 | LNW9A8BYBZ | DIODE | [M] |
| D637 | LNW9A8BYBZ | DIODE | [M] |
| D638 | MTZJ4R3BTA | DIODE | [M] |
| D640 | LNW6B8GYFZ | DIODE | [M] |
| D642 | LNJ201LPQJA | DIODE | [M] |
| D643 | MTZJ4R3BTA | DIODE | [M] |
| D646 | LNW9A8BYBZ | DIODE | [M] |
| D750 | MA8056MTX | DIODE | [M] |
| D801 | RVD1SS133TA | DIODE | [M] |
| D802 | RL1N4003N02 | DIODE | [M] |
| D803 | RL1N4003N02 | DIODE | [M] |
| D804 | RL1N4003N02 | DIODE | [M] |
| D805 | RL1N4003N02 | DIODE | [M] |
| D806 | RL1N4003N02 | DIODE | [M] |
| D807 | MTZJ7R5BTA | DIODE | [M] ⚠ |
| D808 | SB360L6508 | DIODE | [M] |
| D809 | SB360L6508 | DIODE | [M] |
| D810 | SB360L6508 | DIODE | [M] |
| D811 | MTZJ6R8ATA | DIODE | [M] ⚠ |
| D812 | SB360L6508 | DIODE | [M] |
| D814 | RVD1SS133TA | DIODE | [M] |
| D815 | RVD1SS133TA | DIODE | [M] |
| D817 | RVD1SS133TA | DIODE | [M] |
| D818 | RL1N4003N02 | DIODE | [M] |
| D820 | MTZJ16ATA | DIODE | [M] ⚠ |
| D821 | RVD1SS133TA | DIODE | [M] |
| D822 | RL1N4003N02 | DIODE | [M] |
| D823 | RL1N4003N02 | DIODE | [M] |
| D901 | MTZJ5R1BTA | DIODE | [M] |
| D902 | RVD1SS133TA | DIODE | [M] |
| D903 | RB441Q40T77 | DIODE | [M] |
| D904 | RVD1SS133TA | DIODE | [M] |
| D905 | RVD1SS133TA | DIODE | [M] |
| D906 | RVD1SS133TA | DIODE | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D907 | RB441Q40T77 | DIODE | [M] |
| D918 | RVD1SS133TA | DIODE | [M] |
| D971 | MA165TA | DIODE | [M] |
| D1301 | RVD1SS133TA | DIODE | [M] |
| | | | |
| | | VARIABLE RESISTORS | |
| | | | |
| VR681 | EVEGE2F2024B | VR | [M] |
| | | | |
| | | SWITCHES | |
| | | | |
| S1 | RSH1A91ZA-A | SW CD | [M] |
| S3 | RSH1A044-1A | SW OPEN | [M] |
| S4 | RSH1A91ZA-A | SW CD | [M] |
| S5 | RSH1A044-1A | SW OPEN | [M] |
| S6 | RSH1A044-1A | SW OPEN | [M] |
| S7 | RSH1A045-1A | SW TRIGGER | [M] |
| S8 | RSP1A023-A | SW TRV-IN | [M] |
| S701 | RSH1A048-A | SW RESET | [M] |
| S701 | RSH1A048-A | SW REST | [M] |
| S780 | RSH1A049-U | SW OPEN | [M] |
| S971 | RSH1A018-3U | SW MODE | [M] |
| S972 | RSH1A019-2U | SW LEAF | [M] |
| S973 | RSH1A019-2U | SW LEAF | [M] |
| S974 | RSH1A019-2U | SW LEAF | [M] |
| S975 | RSH1A019-2U | SW LEAF | [M] |
| SW630 | EVQ21405R | SW POWER | [M] |
| SW631 | EVQ21405R | SW DISPLAY/CHARACTER | [M] |
| SW632 | EVQ21405R | SW MD-EJECT | [M] |
| SW633 | EVQ21405R | SW LP2/4 | [M] |
| SW634 | EVQ21405R | SW MD-REC | [M] |
| SW635 | EVQ21405R | SW TAPE-REC | [M] |
| SW681 | EVQ21405R | SW CD OPEN/CLOSE | [M] |
| SW682 | EVQ21405R | SW TAPE | [M] |
| SW683 | EVQ21405R | SW TUNER | [M] |
| SW684 | EVQ21405R | SW CD | [M] |
| SW685 | EVQ21405R | SW MD | [M] |
| SW686 | EVQ21405R | SW SELECTOR | [M] |
| SW687 | EVQ21405R | SW FF | [M] |
| SW688 | EVQ21405R | SW STOP | [M] |
| SW689 | EVQ21405R | SW REW | [M] |
| SW761 | EVQ21405R | SW USB/EXT-IN | [M] |
| | | | |
| | | CONNECTORS | |
| | | | |
| CN1 | RJS2A4526T | CONNECTOR | [M] |
| CN4 | RJS2A4830T | CONNECTOR | [M] |
| CN6 | RJU113W10M | 10P CONNECTOR | [M] |
| CN8 | RJS2A4506T | 6P CONNECTOR | [M] |
| CN101A | RJT100W11 | 11P CONNECTOR | [M] |
| CN101B | RJS11T7ZA | CONNECTOR | [M] |
| CN301 | RJS5T7ZA | 5P CONNECTOR | [M] |
| CN505B | RJP6G18ZA | 6P CONNECTOR | [M] |
| CN601A | RJS1A6821 | CONNECTOR | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| CN601B | RJS1A6821 | CONNECTOR | [M] |
| CN701 | RJS2A5625 | 25P FFC CONNECTOR | [M] |
| CN701 | RJS2A8616 | 16P FPC CONNECTOR | [M] |
| CN702 | RJS2A7725 | 25P FFC CONNECTOR | [M] |
| CN731 | RJS2A3330 | 30P FFC CP | [M] |
| CN801 | RJS1A6604T1 | 4P TAPING CONNECTOR | [M] |
| CN802 | RJP9G4YA | CONNECTOR | [M] |
| CN901A | RJP8G9YA | 10P CONNECTOR | [M] |
| CN901B | SJS50878JQ | 8P BTB CONNECTOR | [M] |
| CN902A | RJU057G12 | 12P BTB CONNECTOR | [M] |
| CN902B | RJT057G12 | 12P BTB CONNECTOR | [M] |
| CN902C | RJT057G12 | 12P BTB CONNECTOR | [M] |
| CN902D | RJU057G12 | 12P BTB CONNECTOR | [M] |
| CN903A | RJU057G12 | 12P BTB CONNECTOR | [M] |
| CN903B | RJT057G12 | 12P BTB CONNECTOR | [M] |
| CN903C | RJT057G12 | 12P BTB CONNECTOR | [M] |
| CN903D | RJU057G12 | 12P BTB CONNECTOR | [M] |
| CN904B | RJP7G18ZA | CONNECTOR | [M] |
| CN1301 | RJS11T7ZA | CONNECTOR | [M] |
| CN1303 | RJS9T7ZA | 9P CONNECTOR | [M] |
| CP1 | RJT113W10M | 10P CONNECOR | [M] |
| CP761 | RJT029W02V-1 | MOTOR CONNECTOR | [M] |
| CP1301 | RJS1A6805-J | CONNECTOR | [M] |
| CP1902 | RJT071K09A | CONNECTOR | [M] |
| CS971 | RJU071H09M1 | CONNECTOR | [M] |
| | | | |
| | | COILS & TRANSFORMERS | |
| | | | |
| L1 | G1C100KA0008 | CHIP COIL | [M] |
| L2 | G1C101KA0008 | CHIP COIL | [M] |
| L3 | G1C101KA0008 | CHIP COIL | [M] |
| L4 | G1C101KA0008 | CHIP COIL | [M] |
| L5 | G1C100KA0008 | CHIP COIL | [M] |
| L6 | G1C101KA0008 | CHIP COIL | [M] |
| L7 | RLQP1R8KT2-Y | CHIP COIL | [M] |
| L9 | G1C100KA0008 | CHIP COIL | [M] |
| L11 | G1C100KA0008 | CHIP COIL | [M] |
| L12 | G1C100KA0008 | CHIP COIL | [M] |
| L13 | G1C100KA0008 | CHIP COIL | [M] |
| L101 | RLL500050T-Y | RF CHOKE COIL | [M] |
| L102 | RLL500050T-Y | RF CHOKE COIL | [M] |
| L121 | RLL500050T-Y | RF CHOKE COIL | [M] |
| L122 | RLL500050T-Y | RF CHOKE COIL | [M] |
| L123 | J0JBC0000049 | COIL | [M] |
| L124 | J0JBC0000049 | COIL | [M] |
| L125 | J0JBC0000049 | COIL | [M] |
| L151 | RLQB101KT-1Y | COIL | [M] |
| L152 | RLQB101KT-1Y | COIL | [M] |
| L501 | RLQB3R3KT-1Y | COIL | [M] |
| L502 | RLQB3R3KT-1Y | COIL | [M] |
| L634 | RLL500050T-Y | RF CHOKE COIL | [M] |
| L635 | RLL500050T-Y | RF CHOKE COIL | [M] |
| L701 | RLL500050T-Y | RF CHOKE COIL | [M] |
| L717 | J0JDC0000037 | CHIP COIL | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| L718 | J0JDC0000037 | CHIP COIL | [M] |
| L731 | RLQB270KT-1Y | COIL | [M] |
| L733 | RLL500050T-Y | RF CHOKE COIL | [M] |
| L734 | RLQB270KT-1Y | COIL | [M] |
| L735 | RLQB270KT-1Y | COIL | [M] |
| L736 | RLQB101KT-1Y | COIL | [M] |
| L740 | RLQB1R0KT-1Y | COIL | [M] |
| L802 | RLQZ371 | CHOKE COIL | [M] ⚠ |
| L911 | J0JBC0000049 | COIL | [M] |
| L912 | J0JBC0000049 | COIL | [M] |
| L913 | J0JBC0000049 | COIL | [M] |
| L914 | J0JBC0000049 | COIL | [M] |
| L1301 | RL08B003-M | BIAS OSC COIL | [M] |
| L1303 | RLQA470JT1-Y | AXIAL COIL | [M] |
| T1 | ETP59VQU61LA | POWER TRANSFORMER | [M] ⚠ |
| T2 | RTP1H3E002 | BACK-UP TRANSFORMER | [M] ⚠ |
| | | | |
| | | COMPONENT COMBINATION | |
| | | | |
| Z630 | B3RAB0000012 | R/C SENSOR | [M] |
| Z631 | L5DCAFF00001 | LCD | [M] |
| Z801 | ERZV10V511CS | ZENER | [M] ⚠ |
| Z971 | EXBF7L355SYV | RADA RESISTOR | [M] |
| | | | |
| | | RELAY | |
| | | | |
| RL801 | RSY0040M-0 | RELAY | [M] ⚠ |
| | | | |
| | | OSCILLATORS | |
| | | | |
| X1 | RSXY10M0M02T | CRYSTAL OSCILLATOR | [M] |
| X2 | RSXC16M9S03T | CRYSTAL OSCILLATOR | [M] |
| X120 | H0H120500005 | CRYSTAL OSCILLATOR | [M] |
| X151 | RSXC4M33S02T | CRYSTAL OSCILLATOR | [M] |
| X501 | RSXZ8M00D01T | CERAMIC RESONATOR | [M] |
| X502 | RSXD32K0C01 | CRYSTAL OSCILLATOR | [M] |
| X701 | RSXC33M8S01 | CRYSTAL OSCILLATOR | [M] |
| | | | |
| | | FUSES | |
| | | | |
| F1 | XBA2C06TB0L | FUSE | [M] ⚠ |
| | | | |
| | | FUSE HOLDERS | |
| | | | |
| FC1 | EYF52BC | FUSE HOLDER | [M] |
| FC2 | EYF52BC | FUSE HOLDER | [M] |
| WH101 | RMR0320 | HOLDER | [M] |
| WH301 | RMR0314 | CABLE HOLDER | [M] |
| WH505A | RMR0315 | 6P WIRE HOLDER | [M] |
| WH801 | RJS1A5504 | CABLE HOLDER | [M] |
| WH802 | RJS1A5509 | 9P WIRE HOLDER | [M] |
| WH904A | RMR0316 | 7P WIRE HOLDER | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| WH1302 | RMR0320 | HOLDER | [M] |
| WH1303 | RMR0318 | 9P WIRE HOLDER | [M] |
| | | | |
| | | FUSE PROTECTOR | |
| | | | |
| FP802 | RSFMB50KT-L | PROTECTOR | [M] ⚠ |
| FP803 | RSFMB50KT-L | PROTECTOR | [M] ⚠ |
| FP906 | RSFMB50KT-L | PROTECTOR | [M] ⚠ |
| FP930 | RSFMB20KT-L | PROTECTOR | [M] ⚠ |
| | | | |
| | | THERMISTOR | |
| | | | |
| TH1 | RRSP33J103CW | THERMISTOR | [M] |
| | | | |
| | | JACKS | |
| | | | |
| JK120 | K1FA104B0011 | JK USB | [M] |
| JK301 | RJH2213N | JK 2P RCA | [M] |
| JK503 | RJJ39T01 | JK MIC | [M] |
| JK731 | GP1FA550RZ | JK OPTICAL MODULE | [M] |
| JK801 | SJS9236-1 | JK AC INLET | [M] ⚠ |
| JK901 | RJJ36TA03-C | JK MD LINK | [M] |
| JK951 | K4BC04B00037 | JK BLUE/GRAY SPEAKER | [M] |
| JK952 | K4BC04B00036 | JK RED/BLACK SPEAKER | [M] |
| | | | |
| | | EARTH TERMINAL | |
| | | | |
| E951 | SNE1004-2 | EARTH TERMINAL | [M] |
| | | | |
| | | RESISTORS | |
| | | | |
| R2 | ERJ3GEYJ221V | 220 1/16W | [M] |
| R2 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R3 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R3 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R4 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R5 | ERJ3GEYJ4R7V | 4.7 1/16W | [M] |
| R5 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R6 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R6 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R7 | ERJ3GEYJ471V | 470 1/16W | [M] |
| R7 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R8 | ERJ3GEYJ271V | 270 1/16W | [M] |
| R9 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R9 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R10 | ERJ3GEYJ474V | 470K 1/16W | [M] |
| R10 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R11 | ERJ3GEYJ471V | 470 1/16W | [M] |
| R12 | ERJ3GEYJ471V | 470 1/16W | [M] |
| R12 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R14 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R14 | ERJ6GEY0R00V | 0 1/10W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R15 | ERJ3GEYJ222V | 2.2K 1/16W | [M] |
| R15 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R16 | ERJ3GEYJ222V | 2.2K 1/16W | [M] |
| R16 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R18 | ERJ3GEYJ394V | 390K 1/16W | [M] |
| R18 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R20 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R21 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R22 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R24 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R25 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R26 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R27 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R28 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R28 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R29 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R29 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R30 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R31 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R31 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R32 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R32 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R33 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R33 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R34 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R34 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R35 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R35 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R36 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R36 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R37 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R37 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R38 | ERJ3GEYJ271V | 270 1/16W | [M] |
| R38 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R39 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R39 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R40 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R40 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R41 | ERJ3GEYJ470V | 47 1/16W | [M] |
| R42 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R42 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R43 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R44 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R44 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R45 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R46 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R47 | ERJ6GEY0R00V | 0 1/10W | [M] |
| R50 | ERJ3GEYJ221V | 220 1/16W | [M] |
| R51 | ERJ3GEYJ272V | 2.7K 1/16W | [M] |
| R52 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R56 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R57 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R58 | ERJ3GEYJ123V | 12K 1/16W | [M] |
| R59 | ERJ3GEYJ333V | 33K 1/16W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R61 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R62 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R65 | ERJ3GEYJ471V | 470 1/16W | [M] |
| R66 | ERJ3GEYJ471V | 470 1/16W | [M] |
| R67 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R68 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R69 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R71 | ERJ3GEYJ220V | 22 1/16W | [M] |
| R72 | ERJ3GEYJ220V | 22 1/16W | [M] |
| R73 | ERJ3GEYJ393V | 39K 1/16W | [M] |
| R74 | ERJ3GEYJ822V | 8.2K 1/16W | [M] |
| R75 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R76 | ERJ3GEYJ100V | 10 1/16W | [M] |
| R77 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R81 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R82 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R85 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R86 | ERJ3GEYJ473V | 47K 1/16W | [M] |
| R88 | ERJ3GEYJ1R0V | 1 1/16W | [M] |
| R89 | ERJ3GEYJ1R0V | 1 1/16W | [M] |
| R90 | ERJ3GEYJ1R0V | 1 1/16W | [M] |
| R100 | ERJ3GEYJ473V | 47K 1/16W | [M] |
| R104 | EXBV8V332JV | 3.3K 1/16W | [M] |
| R106 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R107 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R108 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R110 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R111 | ERJ3GEYJ221V | 220 1/16W | [M] |
| R112 | ERJ3GEYJ221V | 220 1/16W | [M] |
| R114 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R115 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R118 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R119 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R120 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R120 | ERJ3GEYJ152V | 1.5K 1/16W | [M] |
| R121 | ERJ3GEYJ220V | 22 1/16W | [M] |
| R122 | ERJ3GEYJ220V | 22 1/16W | [M] |
| R123 | ERJ3GEYJ220V | 22 1/16W | [M] |
| R124 | ERJ3GEYJ105V | 1M 1/16W | [M] |
| R125 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R125 | ERJ3GEYJ473V | 47K 1/16W | [M] |
| R126 | ERJ3GEYJ123V | 12K 1/16W | [M] |
| R126 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R127 | ERJ3GEYJ123V | 12K 1/16W | [M] |
| R128 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R129 | ERJ3GEYJ123V | 12K 1/16W | [M] |
| R130 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R130 | EXBV8V332JV | 3.3K 1/16W | [M] |
| R131 | ERJ3GEYJ123V | 12K 1/16W | [M] |
| R132 | ERJ3GEYJ682V | 6.8K 1/16W | [M] |
| R133 | ERJ3GEYJ682V | 6.8K 1/16W | [M] |
| R134 | ERJ3GEYJ390V | 39 1/16W | [M] |
| R140 | ERJ3GEYJ473V | 47K 1/16W | [M] |
| R141 | ERJ3GEYJ473V | 47K 1/16W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R144 | ERJ3GEYJ1R0V | 1 1/16W | [M] |
| R147 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R152 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R153 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R155 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R156 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R159 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R161 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R162 | ERJ3GEYJ121V | 120 1/16W | [M] |
| R163 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R164 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R167 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R201 | ERJ3GEYJ273V | 27K 1/16W | [M] |
| R202 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R203 | ERJ3GEYJ562V | 5.6K 1/16W | [M] |
| R204 | ERJ3GEYJ332V | 3.3K 1/16W | [M] |
| R205 | ERJ3GEYJ123V | 12K 1/16W | [M] |
| R206 | ERJ3GEYJ183V | 18K 1/16W | [M] |
| R207 | ERJ3GEYJ153V | 15K 1/16W | [M] |
| R208 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R209 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R210 | ERJ3GEYJ562V | 5.6K 1/16W | [M] |
| R211 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R212 | ERJ3GEYJ182V | 1.8K 1/16W | [M] |
| R214 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R216 | ERJ3GEYJ183V | 18K 1/16W | [M] |
| R217 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R219 | ERJ3GEYJ562V | 5.6K 1/16W | [M] |
| R221 | ERJ3GEYJ823V | 82K 1/16W | [M] |
| R222 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R223 | ERJ3GEYJ104V | 100K 1/16W | [M] |
| R224 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R225 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R226 | ERJ3GEYJ152V | 1.5K 1/16W | [M] |
| R227 | ERJ3GEYJ153V | 15K 1/16W | [M] |
| R228 | ERJ3GEYJ822V | 8.2K 1/16W | [M] |
| R229 | ERJ3GEYJ222V | 2.2K 1/16W | [M] |
| R230 | ERJ3GEYJ272V | 2.7K 1/16W | [M] |
| R231 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R232 | ERJ3GEYJ562V | 5.6K 1/16W | [M] |
| R233 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R234 | ERJ3GEYJ104V | 100K 1/16W | [M] |
| R235 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R301 | ERD2FCVG330T | 33 1/4W | [M] |
| R302 | ERJ3GEYJ105V | 1M 1/16W | [M] |
| R304 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R305 | ERJ3GEYJ335V | 3.3M 1/16W | [M] |
| R306 | ERJ3GEYJ563V | 56K 1/16W | [M] |
| R307 | ERJ3GEYJ153V | 15K 1/16W | [M] |
| R308 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R310 | ERJ3GEYJ822V | 8.2K 1/16W | [M] |
| R311 | ERJ3GEYJ272V | 2.7K 1/16W | [M] |
| R312 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R313 | ERJ3GEYJ473V | 47K 1/16W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R314 | ERJ3GEYJ562V | 5.6K 1/16W | [M] |
| R316 | ERJ3GEYJ473V | 47K 1/16W | [M] |
| R317 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R401 | ERJ3GEYJ273V | 27K 1/16W | [M] |
| R402 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R403 | ERJ3GEYJ562V | 5.6K 1/16W | [M] |
| R404 | ERJ3GEYJ332V | 3.3K 1/16W | [M] |
| R405 | ERJ3GEYJ123V | 12K 1/16W | [M] |
| R406 | ERJ3GEYJ183V | 18K 1/16W | [M] |
| R407 | ERJ3GEYJ153V | 15K 1/16W | [M] |
| R408 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R409 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R410 | ERJ3GEYJ562V | 5.6K 1/16W | [M] |
| R411 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R412 | ERJ3GEYJ182V | 1.8K 1/16W | [M] |
| R414 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R416 | ERJ3GEYJ183V | 18K 1/16W | [M] |
| R417 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R419 | ERJ3GEYJ562V | 5.6K 1/16W | [M] |
| R421 | ERJ3GEYJ823V | 82K 1/16W | [M] |
| R422 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R423 | ERJ3GEYJ104V | 100K 1/16W | [M] |
| R424 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R425 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R426 | ERJ3GEYJ152V | 1.5K 1/16W | [M] |
| R427 | ERJ3GEYJ153V | 15K 1/16W | [M] |
| R428 | ERJ3GEYJ822V | 8.2K 1/16W | [M] |
| R429 | ERJ3GEYJ222V | 2.2K 1/16W | [M] |
| R430 | ERJ3GEYJ272V | 2.7K 1/16W | [M] |
| R431 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R432 | ERJ3GEYJ562V | 5.6K 1/16W | [M] |
| R433 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R434 | ERJ3GEYJ104V | 100K 1/16W | [M] |
| R435 | ERJ3GEYJ392V | 3.9K 1/16W | [M] |
| R501 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R502 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R503 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R504 | ERJ3GEYJ474V | 470K 1/16W | [M] |
| R505 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R506 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R507 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R508 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R509 | ERJ3GEYJ331V | 330 1/16W | [M] |
| R510 | ERJ3GEYJ331V | 330 1/16W | [M] |
| R511 | ERJ3GEYJ331V | 330 1/16W | [M] |
| R512 | ERJ3GEYJ471V | 470 1/16W | [M] |
| R513 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R514 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R515 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R516 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R517 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R518 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R520 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R521 | ERJ3GEYJ153V | 15K 1/16W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R522 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R523 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R524 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R525 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R526 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R527 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R528 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R529 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R530 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R531 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R532 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R533 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R534 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R535 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R536 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R537 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R538 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R539 | ERJ3GEYJ105V | 1M 1/16W | [M] |
| R540 | ERJ3GEYJ153V | 15K 1/16W | [M] |
| R541 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R542 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R543 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R544 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R545 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R546 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R547 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R548 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R549 | ERJ3GEYJ334V | 330K 1/16W | [M] |
| R550 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R551 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R553 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R554 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R555 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R556 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R557 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R558 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R559 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R560 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R561 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R563 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R564 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R565 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R566 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R567 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R568 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R569 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R570 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R571 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R572 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R573 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R574 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R575 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R576 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R577 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R578 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R579 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R580 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R581 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R582 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R583 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R584 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R585 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R586 | ERJ3GEYJ104V | 100K 1/16W | [M] |
| R587 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R588 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R589 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R590 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R591 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R592 | ERDS2TJ681T | 680 1/4W | [M] |
| R593 | ERDS2TJ681T | 680 1/4W | [M] |
| R594 | ERDS2TJ820T | 82 1/4W | [M] |
| R595 | ERDS2TJ820T | 82 1/4W | [M] |
| R596 | ERDS2TJ100T | 10 1/4W | [M] |
| R597 | ERDS2TJ100T | 10 1/4W | [M] |
| R598 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R599 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R600 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R601 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R602 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R603 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R604 | ERJ3GEYJ104V | 100K 1/16W | [M] |
| R605 | ERJ3GEYJ473V | 47K 1/16W | [M] |
| R606 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R607 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R608 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R609 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R610 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R611 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R614 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R615 | ERJ3GEYJ104V | 100K 1/16W | [M] |
| R616 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R617 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R631 | ERDS2TJ103T | 10K 1/4W | [M] |
| R632 | ERDS2TJ104T | 100K 1/4W | [M] |
| R634 | ERDS2TJ104T | 100K 1/4W | [M] |
| R635 | ERDS2TJ221T | 220 1/4W | [M] |
| R636 | ERDS2TJ221T | 220 1/4W | [M] |
| R637 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R638 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R641 | ERDS2TJ822T | 8.2K 1/4W | [M] |
| R642 | ERDS2TJ102T | 1K 1/4W | [M] |
| R643 | ERDS2TJ392T | 3.9K 1/4W | [M] |
| R644 | ERDS2TJ121T | 120 1/4W | [M] |
| R645 | ERDS2TJ102T | 1K 1/4W | [M] |
| R648 | ERDS2TJ122T | 1.2K 1/4W | [M] |
| R650 | ERDS2TJ101T | 100 1/4W | [M] |
| R652 | ERDS2TJ103T | 10K 1/4W | [M] |
| R653 | ERDS2TJ182T | 1.8K 1/4W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R655 | ERDS2TJ471T | 470 1/4W | [M] |
| R657 | ERDS2TJ103T | 10K 1/4W | [M] |
| R658 | ERDS2TJ181T | 180 1/4W | [M] |
| R661 | ERDS2TJ561T | 560 1/4W | [M] |
| R662 | ERDS2TJ470T | 47 1/4W | [M] |
| R663 | ERDS2TJ101T | 100 1/4W | [M] |
| R664 | ERDS2TJ103T | 10K 1/4W | [M] |
| R665 | ERDS2TJ471T | 470 1/4W | [M] |
| R666 | ERDS2TJ181T | 180 1/4W | [M] |
| R670 | ERDS2TJ101T | 100 1/4W | [M] |
| R671 | ERDS2TJ101T | 100 1/4W | [M] |
| R672 | ERDS2TJ101T | 100 1/4W | [M] |
| R673 | ERDS2TJ101T | 100 1/4W | [M] |
| R674 | ERDS2TJ222T | 2.2K 1/4W | [M] |
| R675 | ERDS2TJ474T | 470K 1/4W | [M] |
| R682 | ERDS2TJ102T | 1K 1/4W | [M] |
| R683 | ERDS2TJ102T | 1K 1/4W | [M] |
| R684 | ERDS2TJ122T | 1.2K 1/4W | [M] |
| R685 | ERDS2TJ182T | 1.8K 1/4W | [M] |
| R686 | ERDS2TJ222T | 2.2K 1/4W | [M] |
| R687 | ERDS2TJ272T | 2.7K 1/4W | [M] |
| R688 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R689 | ERDS2TJ682T | 6.8K 1/4W | [M] |
| R690 | ERJ3GEYJ104V | 100K 1/16W | [M] |
| R701 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R701 | ERJ3GEYJ4R7V | 4.7 1/16W | [M] |
| R702 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R702 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R703 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R704 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R704 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R705 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R705 | ERJ3GEYJ154V | 150K 1/16W | [M] |
| R706 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R706 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R707 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R707 | ERJ3GEYJ393V | 39K 1/16W | [M] |
| R708 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R708 | ERJ3GEYJ223V | 22K 1/16W | [M] |
| R709 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R709 | ERJ3GEYJ473V | 47K 1/16W | [M] |
| R710 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R711 | ERJ3GEYJ823V | 82K 1/16W | [M] |
| R712 | ERJ3GEYJ221V | 220 1/16W | [M] |
| R714 | ERJ3GEYJ682V | 6.8K 1/16W | [M] |
| R715 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R715 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R716 | J0JDC0000037 | CHIP COIL | [M] |
| R717 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R718 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R719 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R720 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R721 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R723 | ERJ3GEYJ101V | 100 1/16W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R723 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R724 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R724 | ERJ3GEYJ153V | 15K 1/16W | [M] |
| R725 | ERJ3GEYJ681V | 680 1/16W | [M] |
| R727 | ERJ3GEYJ272V | 2.7K 1/16W | [M] |
| R728 | ERJ3GEYJ222V | 2.2K 1/16W | [M] |
| R729 | ERJ3GEYJ272V | 2.7K 1/16W | [M] |
| R731 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R731 | ERJ3GEYJ151V | 150 1/16W | [M] |
| R732 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R732 | ERJ3GEYJ222V | 2.2K 1/16W | [M] |
| R733 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R734 | ERJ3GEYJ222V | 2.2K 1/16W | [M] |
| R735 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R735 | ERJ3GEYJ332V | 3.3K 1/16W | [M] |
| R736 | ERJ3GEYJ101V | 100 1/16W | [M] |
| R736 | ERJ3GEYJ472V | 4.7K 1/16W | [M] |
| R737 | ERJ3GEYJ562V | 5.6K 1/16W | [M] |
| R738 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R741 | ERJ3GEYJ153V | 15K 1/16W | [M] |
| R742 | ERJ3GEYJ224V | 220K 1/16W | [M] |
| R744 | ERJ3GEYJ124V | 120K 1/16W | [M] |
| R749 | ERJ3GEYJ272V | 2.7K 1/16W | [M] |
| R753 | ERJ3GEYJ100V | 10 1/16W | [M] |
| R754 | ERJ3GEYJ5R6V | 5.6 1/16W | [M] |
| R760 | ERJ3GEYJ221V | 220 1/16W | [M] |
| R762 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R762 | ERJ3GEYJ272V | 2.7K 1/16W | [M] |
| R763 | ERJ3GEYJ102V | 1K 1/16W | [M] |
| R801 | ERDS2TJ561T | 560 1/4W | [M] |
| R804 | ERDS2TJ473T | 47K 1/4W | [M] |
| R805 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R806 | ERDS1FVJ180T | 18 1/2W | [M] ⚠ |
| R808 | ERDS2TJ102T | 1K 1/4W | [M] |
| R812 | ERDS2TJ151T | 150 1/4W | [M] |
| R813 | ERDS2TJ103T | 10K 1/4W | [M] |
| R814 | ERDS2TJ103T | 10K 1/4W | [M] |
| R815 | ERDS2TJ272T | 2.7K 1/4W | [M] |
| R816 | ERDS2TJ331T | 330 1/4W | [M] |
| R817 | ERDS2TJ222T | 2.2K 1/4W | [M] |
| R818 | ERDS2TJ820T | 82 1/4W | [M] |
| R819 | ERDS2TJ104T | 100K 1/4W | [M] |
| R820 | ERDS2TJ680T | 68 1/4W | [M] |
| R821 | ERDS2TJ221T | 220 1/4W | [M] |
| R823 | ERDS2TJ221T | 220 1/4W | [M] |
| R824 | ERDS2TG152T | 1.5K 1/4W | [M] |
| R826 | ERDS2TJ122T | 1.2K 1/4W | [M] |
| R827 | ERDS2TJ223T | 22K 1/4W | [M] |
| R828 | ERDS2TJ101T | 100 1/4W | [M] |
| R832 | ERDS2TG152T | 1.5K 1/4W | [M] |
| R834 | ERDS2TJ222T | 2.2K 1/4W | [M] |
| R835 | ERD2FCVG220T | 22 1/4W | [M] |
| R836 | ERDS2TJ104T | 100K 1/4W | [M] |
| R837 | ERDS2TJ101T | 100 1/4W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R838 | ERDS2TJ1R2T | 1.2 1/4W | [M] |
| R839 | ERDS2TJ1R2T | 1.2 1/4W | [M] |
| R840 | ERDS2TJ1R2T | 1.2 1/4W | [M] |
| R843 | ERDS2TJ101T | 100 1/4W | [M] |
| R901 | ERDS2TJ222T | 2.2K 1/4W | [M] |
| R903 | ERDS2TJ102T | 1K 1/4W | [M] |
| R904 | ERDS2TJ823T | 82K 1/4W | [M] |
| R905 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R906 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R907 | ERDS2TJ2R2T | 2.2 1/4W | [M] |
| R908 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R909 | ERDS2TJ101T | 100 1/4W | [M] |
| R910 | ERDS2TJ333T | 33K 1/4W | [M] |
| R911 | ERDS2TJ101T | 100 1/4W | [M] |
| R912 | ERDS2TJ2R2T | 2.2 1/4W | [M] |
| R913 | ERDS2TJ222T | 2.2K 1/4W | [M] |
| R914 | ERDS2TJ333T | 33K 1/4W | [M] |
| R916 | ERDS2TJ123T | 12K 1/4W | [M] |
| R917 | ERDS2TJ102T | 1K 1/4W | [M] |
| R918 | ERDS2TJ104T | 100K 1/4W | [M] |
| R919 | ERDS2TJ123T | 12K 1/4W | [M] |
| R920 | ERDS2TJ333T | 33K 1/4W | [M] |
| R921 | ERDS2TJ102T | 1K 1/4W | [M] |
| R923 | ERDS2TJ2R2T | 2.2 1/4W | [M] |
| R924 | ERDS2TJ332T | 3.3K 1/4W | [M] |
| R925 | ERDS2TJ2R2T | 2.2 1/4W | [M] |
| R926 | ERDS2TJ1R2T | 1.2 1/4W | [M] |
| R927 | ERDS2TJ1R0T | 1 1/4W | [M] |
| R928 | ERDS2TJ1R2T | 1.2 1/4W | [M] |
| R929 | ERDS2TJ1R0T | 1 1/4W | [M] |
| R948 | ERDS2TJ101T | 100 1/4W | [M] |
| R972 | ERDS2TJ821T | 820 1/4W | [M] |
| R973 | ERDS2TJ393T | 39K 1/4W | [M] |
| R982 | ERJ3GEYJ103V | 10K 1/16W | [M] |
| R983 | ERDS2TJ223T | 22K 1/4W | [M] |
| R984 | ERDS2TJ223T | 22K 1/4W | [M] |
| R985 | ERDS2TJ223T | 22K 1/4W | [M] |
| R987 | ERDS2TJ333T | 33K 1/4W | [M] |
| R993 | ERDS2TJ103T | 10K 1/4W | [M] |
| R994 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R995 | ERDS2TJ101T | 100 1/4W | [M] |
| R996 | ERDS2TJ101T | 100 1/4W | [M] |
| R1101 | ERDS2TJ470T | 47 1/4W | [M] |
| R1103 | ERDS2TJ183T | 18K 1/4W | [M] |
| R1104 | ERDS2TJ103T | 10K 1/4W | [M] |
| R1105 | ERDS2TJ681T | 680 1/4W | [M] |
| R1106 | ERDS2TJ104T | 100K 1/4W | [M] |
| R1110 | ERDS2TJ333T | 33K 1/4W | [M] |
| R1111 | ERDS2TJ152T | 1.5K 1/4W | [M] |
| R1201 | ERDS2TJ470T | 47 1/4W | [M] |
| R1203 | ERDS2TJ183T | 18K 1/4W | [M] |
| R1204 | ERDS2TJ103T | 10K 1/4W | [M] |
| R1205 | ERDS2TJ681T | 680 1/4W | [M] |
| R1206 | ERDS2TJ104T | 100K 1/4W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R1210 | ERDS2TJ333T | 33K 1/4W | [M] |
| R1211 | ERDS2TJ152T | 1.5K 1/4W | [M] |
| R1302 | ERDS2TJ101T | 100 1/4W | [M] |
| R1303 | ERDS2TJ475T | 4.7M 1/4W | [M] |
| R1304 | ERDS2TJ223T | 22K 1/4W | [M] |
| R1305 | ERDS2TJ103T | 10K 1/4W | [M] |
| R1306 | ERDS2TJ103T | 10K 1/4W | [M] |
| R1307 | ERDS2TJ220T | 22 1/4W | [M] |
| R1308 | ERDS2TJ220T | 22 1/4W | [M] |
| R1309 | ERDS2TJ102T | 1K 1/4W | [M] |
| R1310 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R1311 | ERDS2TJ473T | 47K 1/4W | [M] |
| R1312 | ERDS2TJ103T | 10K 1/4W | [M] |
| R1314 | ERDS2TJ102T | 1K 1/4W | [M] |
| R1316 | ERDS2TJ102T | 1K 1/4W | [M] |
| R1317 | ERDS2TJ223T | 22K 1/4W | [M] |
| R1318 | ERDS2TJ103T | 10K 1/4W | [M] |
| R1319 | ERDS2TJ123T | 12K 1/4W | [M] |
| R1320 | ERDS2TJ104T | 100K 1/4W | [M] |
| R1321 | ERDS2TJ470T | 47 1/4W | [M] |
| R1322 | ERDS2TJ823T | 82K 1/4W | [M] |
| R1323 | ERDS2TJ332T | 3.3K 1/4W | [M] |
| R1324 | ERDS2TJ222T | 2.2K 1/4W | [M] |
| R1326 | ERDS2TJ822T | 8.2K 1/4W | [M] |
| R1327 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R1328 | ERDS2TJ153T | 15K 1/4W | [M] |
| R1329 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R1330 | ERD2FCVJ4R7T | 4.7 1/4W | [M] |
| R1331 | ERDS2TJ103T | 10K 1/4W | [M] |
| R1332 | ERDS2TJ103T | 10K 1/4W | [M] |
| R1333 | ERD2FCVJ4R7T | 4.7 1/4W | [M] |
| R1334 | ERDS2TJ223T | 22K 1/4W | [M] |
| R1335 | ERDS2TJ152T | 1.5K 1/4W | [M] |
| R1336 | ERDS2TJ152T | 1.5K 1/4W | [M] |
| R1337 | ERDS2TJ103T | 10K 1/4W | [M] |
| R1338 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R1341 | ERDS2TJ681T | 680 1/4W | [M] |
| R1342 | ERDS2TJ103T | 10K 1/4W | [M] |
| R1343 | ERDS2TJ332T | 3.3K 1/4W | [M] |
| R1344 | ERDS2TJ273T | 27K 1/4W | [M] |
| R1345 | ERDS2TJ472T | 4.7K 1/4W | [M] |
| R1347 | ERDS2TJ103T | 10K 1/4W | [M] |
| | | | |
| | | CAPACITORS | |
| | | | |
| C1 | ECUV1H221KBV | 220P 50V | [M] |
| C3 | F1J1A4750002 | 47 10V | [M] |
| C4 | ECUVNJ105ZFV | 10 6.3V | [M] |
| C5 | ECUVNA224KBV | 0.22 10V | [M] |
| C7 | ECUVNA224KBV | 0.22 10V | [M] |
| C8 | ECUVNA224KBV | 0.22 10V | [M] |
| C11 | ECUV1C223KBV | 0.022 16V | [M] |
| C12 | ECUVNJ474KBV | 0.47 6.3V | [M] |
| C13 | ECUVNC104KBV | 0.1 16V | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C14 | ECUV1H102KBV | 1000P 50V | [M] |
| C20 | ECUVNA105KBN | 1 10V | [M] |
| C24 | ECUV1H472KBV | 4700P 50V | [M] |
| C25 | ECUV1H472KBV | 4700P 50V | [M] |
| C28 | ECUVNA105KBN | 1 10V | [M] |
| C33 | F1J1A4750002 | 47 10V | [M] |
| C34 | ECUV1H102KBV | 1000P 50V | [M] |
| C40 | ECUVNJ105ZFV | 1 6.3V | [M] |
| C41 | ECEV1CA100SR | 10 16V | [M] |
| C42 | ECEV0JA470SR | 47 6.3V | [M] |
| C43 | ECUVNJ105ZFV | 1 6.3V | [M] |
| C45 | ECUVNA105KBN | 1 10V | [M] |
| C46 | ECUVNC104ZFV | 0.1 16V | [M] |
| C50 | ECUVNC104ZFV | 0.1 16V | [M] |
| C55 | ECUVNC104KBV | 0.1 16V | [M] |
| C56 | ECUVNC104KBV | 0.1 16V | [M] |
| C58 | ECUV1H102KBV | 1000P 50V | [M] |
| C60 | ECUVNC104ZFV | 0.1 16V | [M] |
| C61 | ECUVNC104ZFV | 0.1 16V | [M] |
| C62 | ECUV1H681KBV | 680P 50V | [M] |
| C63 | ECEV0JA470SR | 47 6.3V | [M] |
| C65 | ECUVNC104KBV | 0.1 16V | [M] |
| C66 | ECUVNC104KBV | 0.1 16V | [M] |
| C70 | ECUV1C223KBV | 0.022 16V | [M] |
| C74 | ECUVNC104ZFV | 0.1 16V | [M] |
| C76 | ECUVNC104ZFV | 0.1 16V | [M] |
| C81 | ECUV1H181KCV | 180P 50V | [M] |
| C82 | ECUVNA224KBV | 0.22 10V | [M] |
| C84 | ECUVNC104ZFV | 0.1 16V | [M] |
| C85 | ECST0GY106RR | 10 4V | [M] |
| C87 | ECUVNC104ZFV | 0.1 16V | [M] |
| C88 | ECUV1H561KBV | 560P 50V | [M] |
| C89 | ECUV1H561KBV | 560P 50V | [M] |
| C90 | ECUV1H080DCV | 8P 50V | [M] |
| C91 | ECUV1H080DCV | 8P 50V | [M] |
| C92 | ECUV1H561KBV | 560P 50V | [M] |
| C93 | ECUV1H561KBV | 560P 50V | [M] |
| C94 | F1J1C225A063 | 2.2 16V | [M] |
| C96 | F1J1C225A063 | 2.2 16V | [M] |
| C97 | F1J1A4750002 | 4.7 10V | [M] |
| C100 | ECA0JAK101XB | 100 6.3V | [M] |
| C101 | ECUV1E104KBN | 0.1 25V | [M] |
| C101 | F1J1A4750002 | 4.7 10V | [M] |
| C102 | ECUV1C104KBV | 0.1 16V | [M] |
| C103 | F1J1A4750002 | 4.7 10V | [M] |
| C106 | ECUV1H102KBV | 1000P 50V | [M] |
| C111 | ECUVNJ105ZFV | 1 6.3V | [M] |
| C114 | ECUV1H102KBV | 1000P 50V | [M] |
| C115 | ECUV1H102KBV | 1000P 50V | [M] |
| C117 | ECEV0JA101SP | 100 6.3V | [M] |
| C118 | ECUVNA105KBN | 1 10V | [M] |
| C120 | ECUV1H181KCV | 180P 50V | [M] |
| C120 | ECUVNC104ZFV | 0.1 16V | [M] |
| C121 | ECUV1H270JCV | 27P 50V | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C122 | ECUV1H270JCV | 27P 50V | [M] |
| C123 | ECUVNC104ZFV | 0.1 16V | [M] |
| C124 | ECUVNC104ZFV | 0.1 16V | [M] |
| C125 | ECUVNC104ZFV | 0.1 16V | [M] |
| C126 | ECUVNC104ZFV | 0.1 16V | [M] |
| C127 | ECA1CAK100XB | 10 16V | [M] |
| C128 | ECA1CAK100XB | 10 16V | [M] |
| C128 | ECUVNC104ZFV | 0.1 16V | [M] |
| C129 | ECUV1H182KBV | 1800P 50V | [M] |
| C130 | ECUV1H182KBV | 1800P 50V | [M] |
| C131 | ECUV1H331KBV | 330P 50V | [M] |
| C132 | ECUV1H331KBV | 330P 50V | [M] |
| C133 | ECUVNC104ZFV | 0.1 16V | [M] |
| C136 | ECA1CAK220XB | 22 16V | [M] |
| C137 | ECA1CAK220XB | 22 16V | [M] |
| C138 | ECA1CAK220XB | 22 16V | [M] |
| C139 | ECA1CAK220XB | 22 16V | [M] |
| C140 | ECUVNC104ZFV | 0.1 16V | [M] |
| C141 | ECUVNC104ZFV | 0.1 16V | [M] |
| C143 | ECUVNA105KBN | 1 10V | [M] |
| C151 | ECA1CAK100XB | 10 16V | [M] |
| C152 | ECA0JAK470XB | 47 6.3V | [M] |
| C153 | ECUV1H331KBV | 330P 50V | [M] |
| C154 | ECA0JAK470XB | 47 6.3V | [M] |
| C155 | ECUV1H561KBV | 560P 50V | [M] |
| C156 | ECUV1H103KBV | 0.01 50V | [M] |
| C157 | ECUV1H470JCV | 47P 50V | [M] |
| C158 | ECUV1H470JCV | 47P 50V | [M] |
| C159 | ECUV1H102KBV | 1000P 50V | [M] |
| C160 | ECUV1H102KBV | 1000P 50V | [M] |
| C201 | ECUV1H101JCV | 100P 50V | [M] |
| C202 | ECUV1H101JCV | 100P 50V | [M] |
| C203 | ECA1HAK4R7XB | 4.7 50V | [M] |
| C204 | ECUV1H332KBV | 3300P 50V | [M] |
| C205 | ECUV1H102KBV | 1000P 50V | [M] |
| C206 | ECUV1H221KBV | 220P 50V | [M] |
| C207 | ECUV1H221KBV | 220P 50V | [M] |
| C208 | ECUV1H102KBV | 1000P 50V | [M] |
| C210 | ECA1CAK100XB | 10 16V | [M] |
| C211 | ECUV1H682KBV | 6800P 50V | [M] |
| C212 | ECFR1C223KR | 0.022 16V | [M] |
| C213 | ECKR1H102KB5 | 1000P 50V | [M] |
| C214 | ECQV1H184JL3 | 0.18 50V | [M] |
| C215 | ECQV1H184JL3 | 0.18 50V | [M] |
| C216 | ECQV1H154JZ3 | 0.15 50V | [M] |
| C217 | ECQV1H154JZ3 | 0.15 50V | [M] |
| C218 | ECUV1H471JCV | 470P 50V | [M] |
| C219 | ECQV1H104JZ3 | 0.1 50V | [M] |
| C220 | ECQB1H182JF3 | 1800P 50V | [M] |
| C221 | ECQB1H183JF3 | 0.018 50V | [M] |
| C222 | ECUV1H471JCV | 470P 50V | [M] |
| C224 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C225 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C226 | ECA1HAK2R2XB | 2.2 50V | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C227 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C228 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C229 | ECA1CAK100XB | 10 16V | [M] |
| C301 | ECUVNC104ZFV | 0.1 16V | [M] |
| C302 | ECA1CAK101XB | 100 16V | [M] |
| C303 | ECUV1H472KBV | 4700P 50V | [M] |
| C304 | ECA0JAM102XB | 1000 6.3V | [M] |
| C305 | ECUV1A105KBN | 1 10V | [M] |
| C306 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C308 | ECA1HAK010XB | 1 50V | [M] |
| C311 | ECA1CAM471XB | 470 16V | [M] |
| C312 | ECUV1H470JCV | 47P 50V | [M] |
| C313 | ECA1CAK470XB | 47 16V | [M] |
| C314 | ECUV1H470JCV | 47P 50V | [M] |
| C315 | ECA1HAKR22XB | 0.22 50V | [M] |
| C316 | ECA1HAKR22XB | 0.22 50V | [M] |
| C317 | ECA1HAK010XB | 1 50V | [M] |
| C318 | ECQV1H154JZ3 | 0.15 50V | [M] |
| C319 | ECFR1C473KR | 0.047 16V | [M] |
| C320 | ECUV1H471JCV | 470P 50V | [M] |
| C323 | ECA1HAK3R3XB | 3.3 50V | [M] |
| C324 | ECUV1E103KBV | 0.01 25V | [M] |
| C401 | ECUV1H101JCV | 100P 50V | [M] |
| C402 | ECUV1H101JCV | 100P 50V | [M] |
| C403 | ECA1HAK4R7XB | 4.7 50V | [M] |
| C404 | ECUV1H332KBV | 3300P 50V | [M] |
| C405 | ECUV1H102KBV | 1000P 50V | [M] |
| C406 | ECUV1H221KBV | 220P 50V | [M] |
| C407 | ECUV1H221KBV | 220P 50V | [M] |
| C408 | ECUV1H102KBV | 1000P 50V | [M] |
| C410 | ECA1CAK100XB | 10 16V | [M] |
| C411 | ECUV1H682KBV | 6800P 50V | [M] |
| C412 | ECFR1C223KR | 0.022 16V | [M] |
| C413 | ECKR1H102KB5 | 1000P 50V | [M] |
| C414 | ECQV1H184JL3 | 0.18 50V | [M] |
| C415 | ECQV1H184JL3 | 0.18 50V | [M] |
| C416 | ECQV1H154JZ3 | 0.15 50V | [M] |
| C417 | ECQV1H154JZ3 | 0.15 50V | [M] |
| C418 | ECUV1H471JCV | 470P 50V | [M] |
| C419 | ECQV1H104JZ3 | 0.1 50V | [M] |
| C420 | ECQB1H182JF3 | 1800P 50V | [M] |
| C421 | ECQB1H183JF3 | 0.018 50V | [M] |
| C422 | ECUV1H471JCV | 470P 50V | [M] |
| C424 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C425 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C426 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C427 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C428 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C429 | ECA1CAK100XB | 10 16V | [M] |
| C501 | ECUVNC104ZFV | 0.1 16V | [M] |
| C502 | ECA1CAK100XB | 10 16V | [M] |
| C503 | ECUVNC104ZFV | 0.1 16V | [M] |
| C504 | ECUV1H472KBV | 4700P 50V | [M] |
| C505 | ECUV1H472KBV | 4700P 50V | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C506 | ECUV1H472KBV | 4700P 50V | [M] |
| C507 | ECUV1H472KBV | 4700P 50V | [M] |
| C508 | ECUV1H472KBV | 4700P 50V | [M] |
| C509 | ECUV1H472KBV | 4700P 50V | [M] |
| C510 | ECUV1H472KBV | 4700P 50V | [M] |
| C511 | ECUV1H472KBV | 4700P 50V | [M] |
| C512 | ECUVNC104ZFV | 0.1 16V | [M] |
| C513 | ECUVNC104ZFV | 0.1 16V | [M] |
| C514 | ECUV1H180JCV | 18P 50V | [M] |
| C515 | ECUV1H090DCV | 9P 50V | [M] |
| C516 | ECUV1H180JCV | 18P 50V | [M] |
| C517 | ECUV1H220JCV | 22P 50V | [M] |
| C518 | ECUV1H101JCV | 100P 50V | [M] |
| C519 | ECUV1H101JCV | 100P 50V | [M] |
| C520 | ECUV1H101JCV | 100P 50V | [M] |
| C521 | ECUV1H101JCV | 100P 50V | [M] |
| C524 | ECUV1E103KBV | 0.01 25V | [M] |
| C525 | ECUV1H101JCV | 100P 50V | [M] |
| C526 | ECUV1H101JCV | 100P 50V | [M] |
| C527 | ECA1HAK010XB | 1 50V | [M] |
| C528 | ECA0JAK101XB | 100 6.3V | [M] |
| C529 | ECA0JM102B | 1000P 6.3V | [M] |
| C530 | ECUV1E103KBV | 0.01 25V | [M] |
| C531 | ECA0JAK101XB | 100 6.3V | [M] |
| C532 | ECA0JM102B | 1000P 6.3V | [M] |
| C533 | ECA1HAK010XB | 1 50V | [M] |
| C534 | ECA0JAK470XB | 47 6.3V | [M] |
| C535 | ECA0JAK470XB | 47 6.3V | [M] |
| C536 | ECA0JAK470XB | 47 6.3V | [M] |
| C589 | ECBT1H473KB5 | 0.047 50V | [M] |
| C590 | ECBT1H473KB5 | 0.047 50V | [M] |
| C591 | ECA1AAK221XB | 220 10V | [M] |
| C592 | ECA1AAK221XB | 220 10V | [M] |
| C630 | ECA1HAK4R7XB | 4.7 50V | [M] |
| C631 | ECA0JAK470XB | 47 6.3V | [M] |
| C634 | ECBT1H103KB5 | 0.01 50V | [M] |
| C636 | ECA1HAK010XB | 1 50V | [M] |
| C638 | ECBT1H101KB5 | 100P 50V | [M] |
| C639 | ECBT1H101KB5 | 100P 50V | [M] |
| C641 | ECBT1H101KB5 | 100P 50V | [M] |
| C642 | ECA1AAK220XB | 22 10V | [M] |
| C643 | ECBT1H103KB5 | 0.01 50V | [M] |
| C644 | ECA1HAK010XB | 1 50V | [M] |
| C645 | ECA1HAK010XB | 1 50V | [M] |
| C646 | ECBT1H104KB5 | 0.1 50V | [M] |
| C647 | ECBT1H104KB5 | 0.1 50V | [M] |
| C681 | ECBT1H101KB5 | 100P 50V | [M] |
| C682 | ECBT1H101KB5 | 100P 50V | [M] |
| C701 | ECEA0JKA330I | 33 6.3V | [M] |
| C701 | ECUV1H102KBV | 1000P 50V | [M] |
| C702 | ECA1CAK220XB | 22 16V | [M] |
| C702 | ECUV1C104KBV | 0.1 16V | [M] |
| C703 | ECEA0JKA101I | 100 6.3V | [M] |
| C703 | ECUVNC104ZFV | 0.1 16V | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C704 | ECA1HAK010XB | 1 50V | [M] |
| C704 | ECUV1C104KBV | 0.1 16V | [M] |
| C705 | ECUVNC104ZFV | 0.1 16V | [M] |
| C706 | ECUV1H272KBV | 2700P 50V | [M] |
| C707 | ECUV1E273KBV | 0.027 25V | [M] |
| C710 | ECUV1H121JCV | 120P 50V | [M] |
| C711 | ECUV1C104KBV | 0.1 16V | [M] |
| C712 | ECUV1C104KBV | 0.1 16V | [M] |
| C713 | ECUV1C104KBV | 0.1 16V | [M] |
| C714 | ECEA0JKA101I | 100 6.3V | [M] |
| C715 | ECUV1H272KBV | 2700P 50V | [M] |
| C716 | ECUV1H102KBV | 1000P 50V | [M] |
| C717 | ECUV1E104ZFV | 0.1 25V | [M] |
| C718 | ECUV1C104KBV | 0.1 16V | [M] |
| C723 | ECEA1AKA221I | 220 10V | [M] |
| C724 | ECUV1C104KBV | 0.1 16V | [M] |
| C725 | ECUV1H102KBV | 1000P 50V | [M] |
| C726 | ECUV1H102KBV | 1000P 50V | [M] |
| C727 | ECA1HAK010XI | 1 50V | [M] |
| C728 | ECA1HAK010XI | 1 50V | [M] |
| C730 | ECUV1E104ZFV | 0.1 25V | [M] |
| C731 | ECA0JAK221XI | 220 6.3V | [M] |
| C731 | ECUVNC104ZFV | 0.1 16V | [M] |
| C732 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C732 | ECEA0JKA221I | 220 6.3V | [M] |
| C733 | ECA1HAK2R2XB | 2.2 50V | [M] |
| C733 | ECUV1C104KBV | 0.1 16V | [M] |
| C734 | ECEA1AKA221I | 220 10V | [M] |
| C734 | ECUV1H680JCV | 68P 50V | [M] |
| C735 | ECA1HAK010XB | 1 50V | [M] |
| C735 | ECUV1E104ZFV | 0.1 25V | [M] |
| C736 | ECA1CAK220XB | 22 16V | [M] |
| C736 | ECUV1E104ZFV | 0.1 25V | [M] |
| C737 | ECA0JAM471XB | 470 6.3V | [M] |
| C737 | ECUV1E103KBV | 0.01 25V | [M] |
| C738 | ECUV1C563KBV | 0.056 16V | [M] |
| C738 | ECUVNC104ZFV | 0.1 16V | [M] |
| C739 | ECUV1H222KBV | 2200P 50V | [M] |
| C741 | ECA0JAM471XB | 470 6.3V | [M] |
| C742 | ECUV1E273KBV | 0.027 25V | [M] |
| C743 | ECUV1E104ZFV | 0.1 25V | [M] |
| C744 | ECUV1H562KBV | 5600P 50V | [M] |
| C745 | ECUV1E104ZFV | 0.1 25V | [M] |
| C747 | ECUV1H181JCV | 180P 50V | [M] |
| C749 | ECUV1H222KBV | 2200P 50V | [M] |
| C750 | ECUV1C104KBV | 0.1 16V | [M] |
| C751 | ECUV1C104KBV | 0.1 16V | [M] |
| C752 | ECUV1H152KBV | 1500P 50V | [M] |
| C753 | ECUV1H471KBV | 470P 50V | [M] |
| C754 | ECUV1H471KBV | 470P 50V | [M] |
| C760 | ECUV1A224KBV | 0.22 10V | [M] |
| C770 | ECUV1A224KBV | 0.22 10V | [M] |
| C801 | ECKR1H103ZF5 | 0.01 50V | [M] |
| C802 | ECKR1H103ZF5 | 0.01 50V | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C803 | ECQE2104KF3 | 0.1 250V | [M] |
| C804 | ECBT1H103KB5 | 0.01 50V | [M] |
| C805 | ECKR1H103ZF5 | 0.01 50V | [M] |
| C807 | ECA1CAM102XB | 1000 16V | [M] |
| C808 | ECA1HAK4R7XB | 4.7 50V | [M] |
| C810 | ECBT1H103KB5 | 0.01 50V | [M] |
| C811 | ECBT1H103KB5 | 0.01 50V | [M] |
| C812 | ECBT1H103KB5 | 0.01 50V | [M] |
| C813 | ECA1EM470B | 47 25V | [M] |
| C815 | ECA1EAK100XB | 10 25V | [M] |
| C816 | ECA1HAK010XB | 1 50V | [M] |
| C817 | ECKR1H223ZF5 | 0.022 50V | [M] |
| C818 | ECBT1H104KB5 | 0.1 50V | [M] |
| C819 | ECBT1H103KB5 | 0.01 50V | [M] |
| C820 | ECA1VM221B | 220 35V | [M] |
| C821 | ECBT1H103KB5 | 0.01 50V | [M] |
| C822 | ECA1HAK4R7XB | 4.7 50V | [M] |
| C823 | ECA1EAK100XB | 10 25V | [M] |
| C824 | ECA1CAK101XB | 100 16V | [M] |
| C825 | ECA1HAK010XB | 1 50V | [M] |
| C826 | ECBT1H103KB5 | 0.01 50V | [M] |
| C827 | ECBT1H103KB5 | 0.01 50V | [M] |
| C828 | ECA1EAK100XB | 10 25V | [M] |
| C831 | ECBT1H103KB5 | 0.01 50V | [M] |
| C832 | ECA1EAM682XE | 6800 25V | [M] |
| C833 | ECA1EAM222XE | 2200 25V | [M] |
| C901 | ECQV1H334JZ3 | 0.33 50V | [M] |
| C902 | ECA1CAM101XB | 100 16V | [M] |
| C903 | ECQV1H224JZ3 | 0.22 50V | [M] |
| C904 | ECA1CAK100XB | 10 16V | [M] |
| C905 | ECQV1H224JZ3 | 0.22 50V | [M] |
| C906 | ECA1CAK220XB | 22 16V | [M] |
| C907 | ECA1CAK101XB | 100 16V | [M] |
| C908 | ECA1CAK100XB | 10 16V | [M] |
| C909 | ECA1EAK330XB | 33 25V | [M] |
| C910 | ECBT1H471KB5 | 470P 50V | [M] |
| C911 | ECBT1H102KB5 | 1000P 50V | [M] |
| C912 | ECBT1H471KB5 | 470P 50V | [M] |
| C913 | ECBT1H102KB5 | 1000P 50V | [M] |
| C914 | ECA1EAM331XB | 330 25V | [M] |
| C915 | ECA1CAK100XB | 10 16V | [M] |
| C916 | ECA1CAK101XB | 100 16V | [M] |
| C917 | ECQV1H224JZ3 | 0.22 50V | [M] |
| C918 | ECA1CAM471XB | 470 16V | [M] |
| C919 | ECBT1H221KB5 | 220P 50V | [M] |
| C920 | ECA1CAK101XB | 100 16V | [M] |
| C922 | ECQV1H224JZ3 | 0.22 50V | [M] |
| C923 | ECA1HAK010XB | 1 50V | [M] |
| C924 | ECA1CAK101XB | 100 16V | [M] |
| C926 | ECQV1H224JZ3 | 0.22 50V | [M] |
| C927 | ECA1CAM471XB | 470 16V | [M] |
| C928 | ECA1CAK220XB | 22 16V | [M] |
| C929 | ECQV1H224JZ3 | 0.22 50V | [M] |
| C941 | ECBT1H102KB5 | 1000P 50V | [M] |

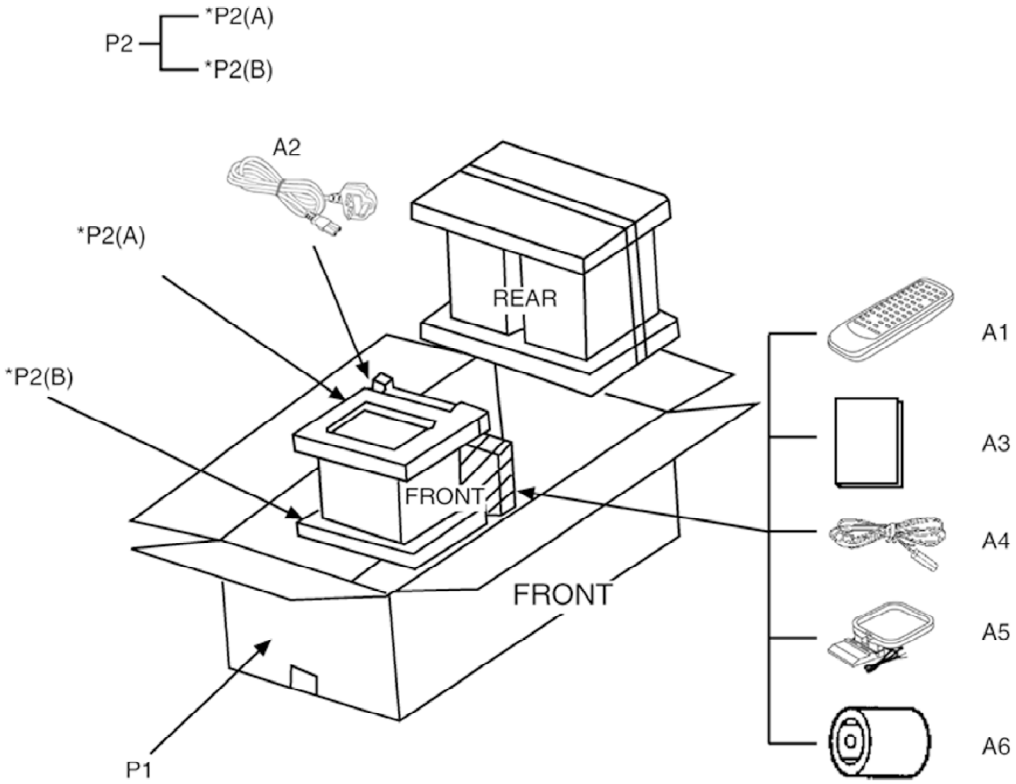
| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C942 | ECBT1H102KB5 | 1000P 50V | [M] |
| C951 | ECBT1H473KB5 | 0.047 50V | [M] |
| C953 | ECBT1H104KB5 | 0.1 50V | [M] |
| C955 | ECBT1H473KB5 | 0.047 50V | [M] |
| C956 | ECBT1H102KB5 | 1000P 50V | [M] |
| C957 | ECBT1H102KB5 | 1000P 50V | [M] |
| C958 | ECBT1H471KB5 | 470P 50V | [M] |
| C959 | ECBT1H471KB5 | 470P 50V | [M] |
| C960 | ECBT1H471KB5 | 470P 50V | [M] |
| C1101 | ECA1HAK010XB | 1 50V | [M] |
| C1102 | ECBT1H102KB5 | 1000P 50V | [M] |
| C1103 | ECA0JAK101XB | 100 6.3V | [M] |
| C1104 | ECFR1E393KR | 0.039 25V | [M] |
| C1105 | ECBT1H471KB5 | 470P 50V | [M] |
| C1106 | ECA1HAK3R3XB | 3.3 50V | [M] |
| C1108 | ECA1CAK100XB | 10 16V | [M] |
| C1109 | ECA1HAK3R3XB | 3.3 50V | [M] |
| C1201 | ECA1HAK010XB | 1 50V | [M] |
| C1202 | ECBT1H102KB5 | 1000P 50V | [M] |
| C1203 | ECA0JAK101XB | 100 6.3V | [M] |
| C1204 | ECFR1E393KR | 0.039 25V | [M] |
| C1205 | ECBT1H471KB5 | 470P 50V | [M] |
| C1206 | ECA1HAK3R3XB | 3.3 50V | [M] |
| C1208 | ECA1CAK100XB | 10 16V | [M] |
| C1209 | ECA1HAK3R3XB | 3.3 50V | [M] |
| C1301 | ECA1HAK010XB | 1 50V | [M] |
| C1302 | ECFR1E333KR | 0.033 25V | [M] |
| C1303 | ECFR1E333KR | 0.033 25V | [M] |
| C1304 | ECA1CAK100XB | 10 16V | [M] |
| C1305 | ECA1CAK330XB | 33 16V | [M] |
| C1306 | ECA1CAK100XB | 10 16V | [M] |
| C1307 | ECA1AAK221XB | 220 10V | [M] |
| C1308 | ECA1CAK220XB | 22 16V | [M] |
| C1309 | ECA1CAK100XB | 10 16V | [M] |
| C1311 | ECA1CAK470XB | 47 16V | [M] |
| C1312 | ECBT1C332KR5 | 3300P 16V | [M] |
| C1314 | ECBT1C222KR5 | 2200P 16V | [M] |
| C1315 | ECBT1C222KR5 | 2200P 16V | [M] |
| C1316 | ECBT1H102KB5 | 1000P 50V | [M] |
| C1317 | ECBT1H102KB5 | 1000P 50V | [M] |
| C1318 | ECQV1H473JZ3 | 0.047 50V | [M] |
| C1319 | ECA1CAK101XB | 100 16V | [M] |
| C1320 | ECA1HAK010XB | 1 50V | [M] |
| C1321 | ECQP1472JZT | 4700P 100V | [M] |
| C1322 | ECQP2A102JZT | 1000P 100V | [M] |
| C1323 | ECEA1HN010SB | 1 50V | [M] |
| C1324 | ECA1CAK470XB | 47 16V | [M] |
| C1325 | ECBT1C103MS5 | 0.01 16V | [M] |
| C1326 | ECA1CAK100XB | 10 16V | [M] |
| C1327 | ECBT1H103KB5 | 0.01 50V | [M] |
| | | | |
| | | CHIP JUMPER | |
| | | | |
| RJ701 | ERJ3GEY0R00V | 0 1/16W | [M] |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| RJ702 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ703 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ704 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ705 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ706 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ709 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ710 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ712 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ713 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ721 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ722 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ723 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ724 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ726 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ727 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ728 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ731 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ732 | ERJ3GEY0R00V | 0 1/16W | [M] |
| RJ734 | ERJ3GEY0R00V | 0 1/16W | [M] |
| | | | |
| | | TEST JUMPER | |
| | | | |
| TJ701 | EYF8CU | TEST JUMPER | [M] |
| | | | |

## 21.6. Packaging Materials & Accessories Parts List

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | PACKING MATERIALS | |
| | | | |
| P1 | RPG5509 | PACKING CASE | [M] |
| P2 | RPN1447 | POLYFOAM | [M] |
| P3 | RPHV0001 | MIRAMAT SHEET | [M] |
| | | | |
| | | ACCESSORIES | |
| | | | |
| A1 | EUR648109 | REMOTE CONTROL | [M] |
| A1-1 | UR64EC2176D | R/C BATTERY COVER | [M] |
| A2 | VJA0733 | AC CORD (SF) | [M] ⚠ |
| A3 | RQT5975-B | O/I BOOK (En) | [M] |
| A4 | RSA0007-L | FM ANTENNA WIRE | [M] |
| A5 | RSA0033 | AM LOOP ANTENNA | [M] |
| A6 | SJP9009 | ANTENNA ADAPTER | [M] |

## 21.7. Packaging

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SCHEMATIC DIAGRAM-1

SIDE A | SIDE B

: MD SIGNAL LINE
: +B SIGNAL LINE
: MD RECORD SIGNAL LINE

## A MD SERVO CIRCUIT

### MD OPTICAL PICKUP

FOCUS COIL
TRACKING COIL
F-PD
H G I J K L F
PD GND VREF RF2 RF1 D C Vcc
APC B F2 F1 A LD LD GND
C B D E A
NC GND LD LD GND
GND IDC IN HFMW NC
0.1
0.022
1μH
300

FCS+ TRK+ TRK- FCS- GND PD-A PD-C GND A B APC F2 F1 GND Vcc VREF PD-GND RF2 RF1 GND D C GND LD LD-GND HFMV

CN1

TP65 TP68

C8 0.22
C7 0.22

TP108

Q3
2SD2216STX
POWER SUPPLY

Q1
2SB1462STX
LASER POWER DRIVE

R5 4.7
TP1
R6 4.7K
C5 0.22
R8 270
R2 220
R22 4.7K

<2.5V> <3.3V> <3.3V> 3.3V <3.3V> <2.6V> <1.8V>

M21
(TRAVERSE MOTOR)

M11
(SPINDLE MOTOR)

M31
(LOADING MOTOR)

L700
(MAGNETIC HEAD)

CN8

TP103

D6 SC80209TE12R
D5 SC80209TE12R

Q11
2SK1764KYTR
HEAD DRIVE

Q10
2SJ278MYTR
HEAD DRIVE

R71 22
R72 22
C120 180P
C81 180P
C118 1
C133 0.1
C123 0.1

TP105
TP106

IC11
TC74HCT00AFL
NAND GATE

L11 10μH
C117 6.3V100
C60 0.1

5V

IC92
LB1830MS-TLM
MOTOR DRIVE

VS OUT1 GND OUT2 Vcc
VCONT VREF VM IN1 IN2

R74 8.2K
C106 1000P
R73 39K
R75 22K
R77 22K

### B MD SWITCH CIRCUIT

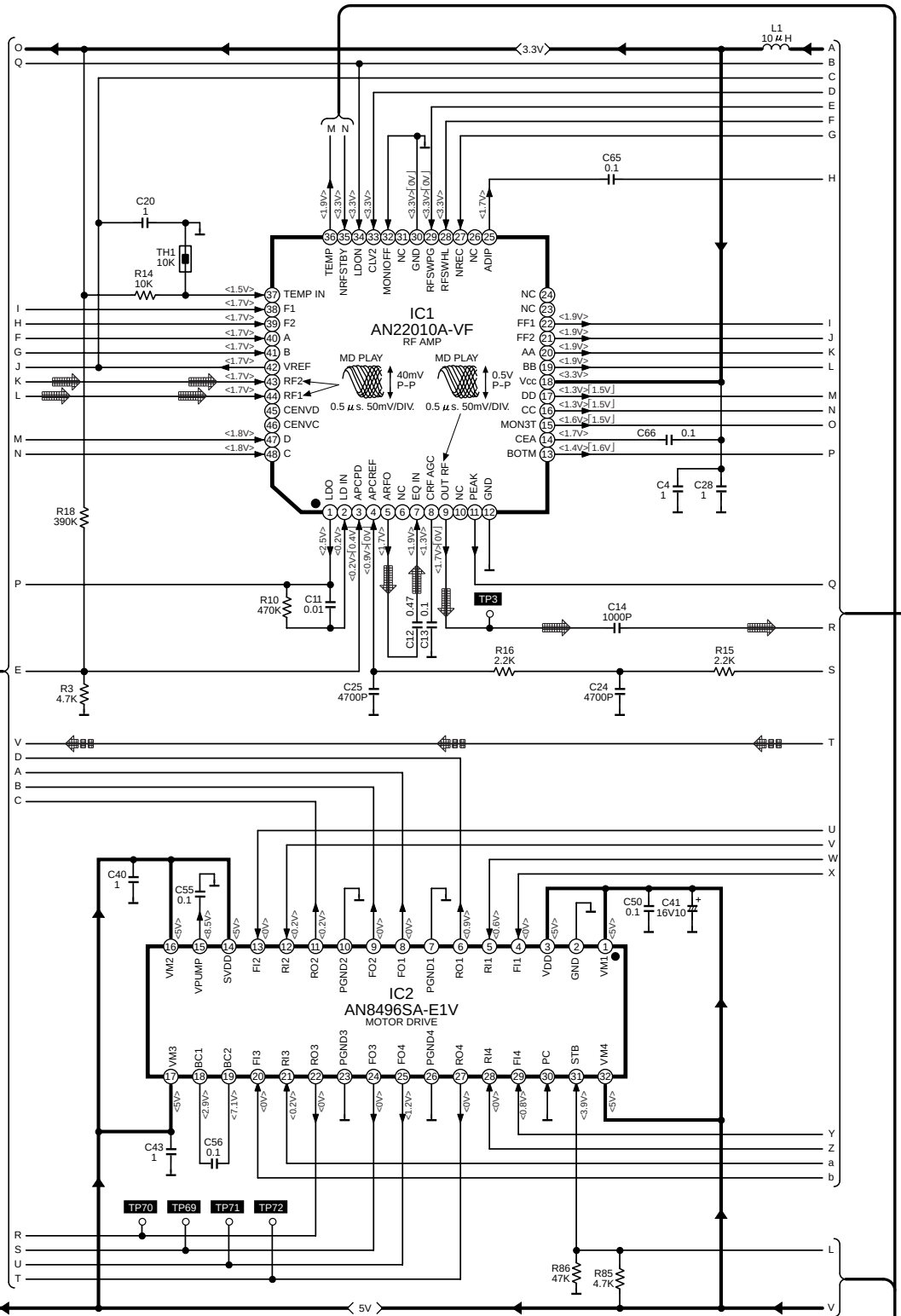
S1 (PROTECT) CN6
S4 (DISC IN)
S5 (LOAD PLAY/REC)
S6 (LOAD PLAY)
S8 (TRAVERSE)
S7 (LOAD TRG)
S3 (LOAD OPEN)

CP1

D9 MA728TX

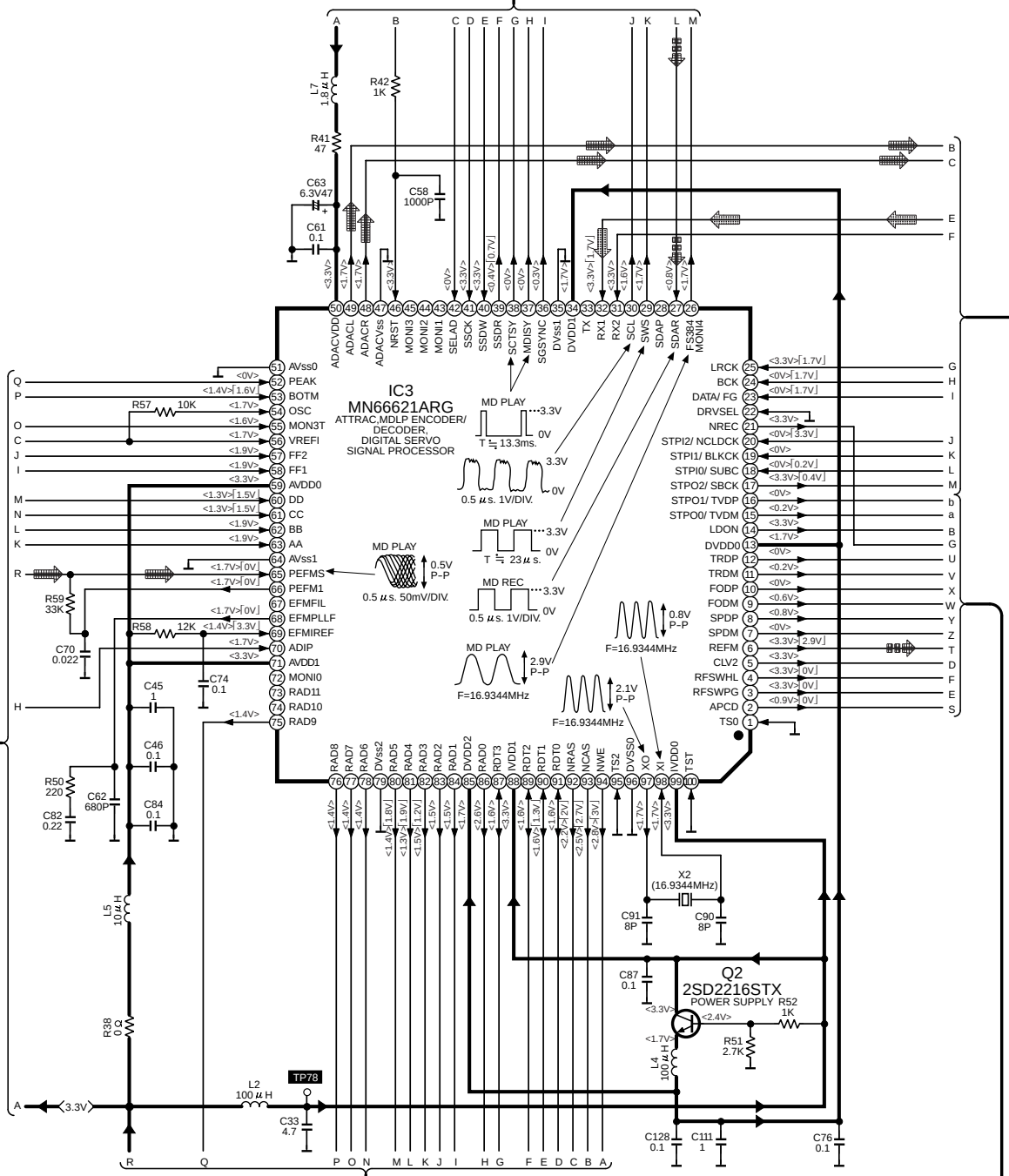
## A MD SERVO CIRCUIT

: +B SIGNAL LINE
: MD SIGNAL LINE
: MD RECORD SIGNAL LINE



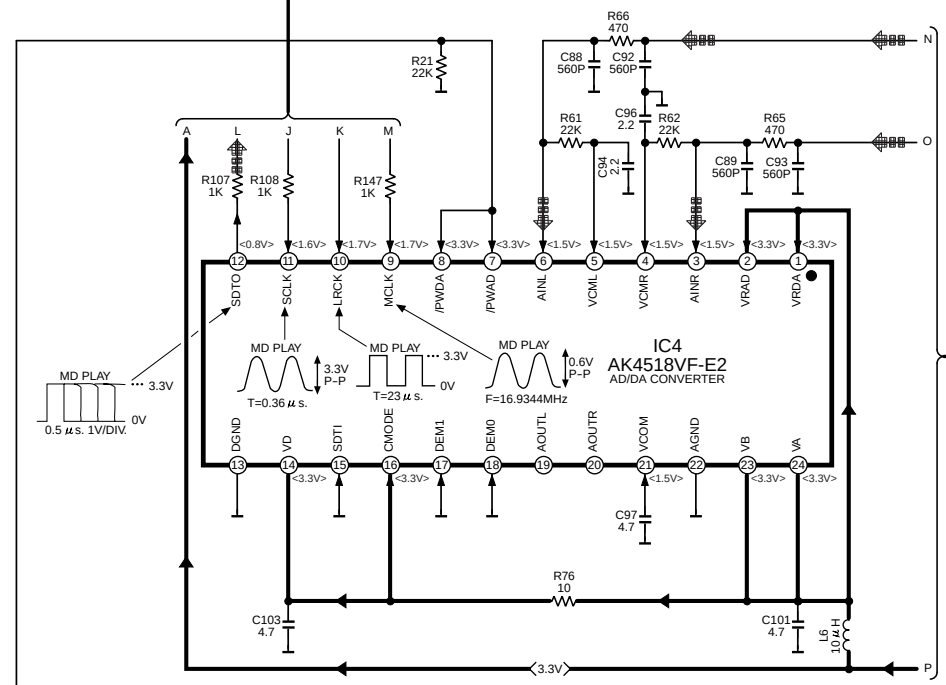
# A MD SERVO CIRCUIT

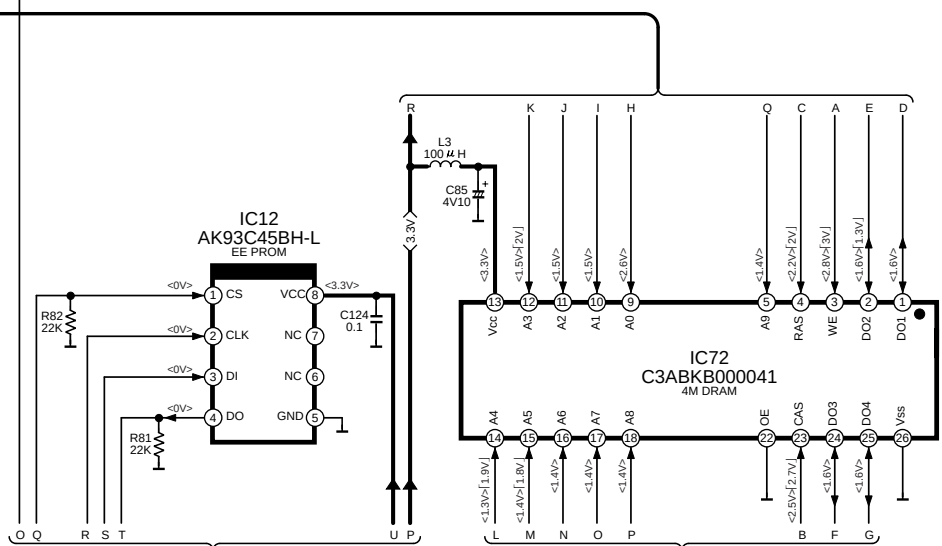
: CD SIGNAL LINE : MD SIGNAL LINE
: +B SIGNAL LINE : MD RECORD SIGNAL LINE


IC3
MN66621ARG
ATTRAC,MDLP ENCODER/ DECODER, DIGITAL SERVO SIGNAL PROCESSOR
ADACVDD ADACL ADACR ADACVss NRST MONI3 MONI2 MONI1 SELAD SSCK SSDW SSDR SCTSY MDISY SGSYNC DVss1 DVDD1 TX RX1 RX2 SCL SWS SDAP SDAR FS384 MONI4
AVss0 PEAK BOTM OSC MON3T VREFI FF2 FF1 AVDD0 DD CC BB AA AVss1 PEFMS PEFM1 EFMFIL EFMPLLF EFMIREF ADIP AVDD1 MONI0 RAD11 RAD10 RAD9
LRCK BCK DATA/ FG DRVSEL NREC STPI2/ NCLDCK STPI1/ BLKCK STPI0/ SUBC STPO2/ SBCK STPO1/ TVDP STPO0/ TVDM LDON DVDD0 TRDP TRDM FODP FODM SPDP SPDM REFM CLV2 RFSWHL RFSWPG APCD TS0
RAD8 RAD7 RAD6 DVss2 RAD5 RAD4 RAD3 RAD2 RAD1 DVDD2 RAD0 RDT3 IVDD1 RDT2 RDT1 RDT0 NRAS NCAS NWE TS2 DVSS0 XO XI IVDD0 TST
MD PLAY 3.3V 0V T ≒ 13.3ms.
0.5 μs. 1V/DIV.
MD PLAY 3.3V 0V T ≒ 23 μs.
MD REC 3.3V 0V 0.5 μs. 1V/DIV.
MD PLAY 0.5V P-P 0.5 μs. 50mV/DIV.
MD PLAY 2.9V P-P F=16.9344MHz
0.8V P-P F=16.9344MHz
2.1V P-P F=16.9344MHz
X2 (16.9344MHz)
Q2 2SD2216STX POWER SUPPLY R52
TP78
R42 1K
R41 47
C63 6.3V47
C61 0.1
C58 1000P
L7 1.8μH
R57 10K
R58 12K
R59 33K
C70 0.022
C74 0.1
C45 1
C46 0.1
C84 0.1
R50 220
C62 680P
C82 0.22
L5 10μH
R38 0Ω
L2 100μH
C33 4.7
C91 8P
C90 8P
C87 0.1
L4 100μH
R51 2.7K
C128 0.1
C111 1
C76 0.1

# A MD SERVO CIRCUIT

: +B SIGNAL LINE : MD RECORD SIGNAL LINE

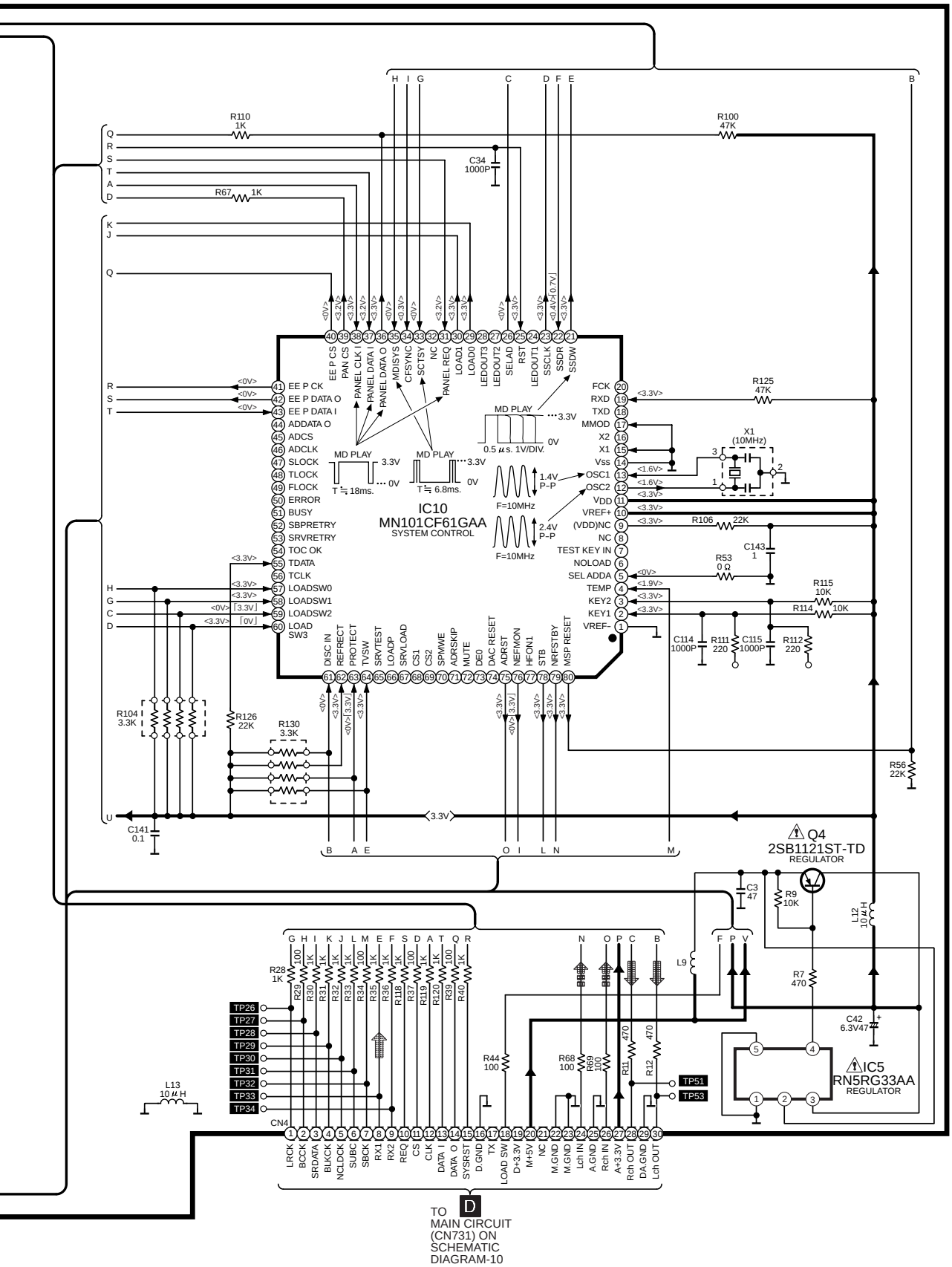


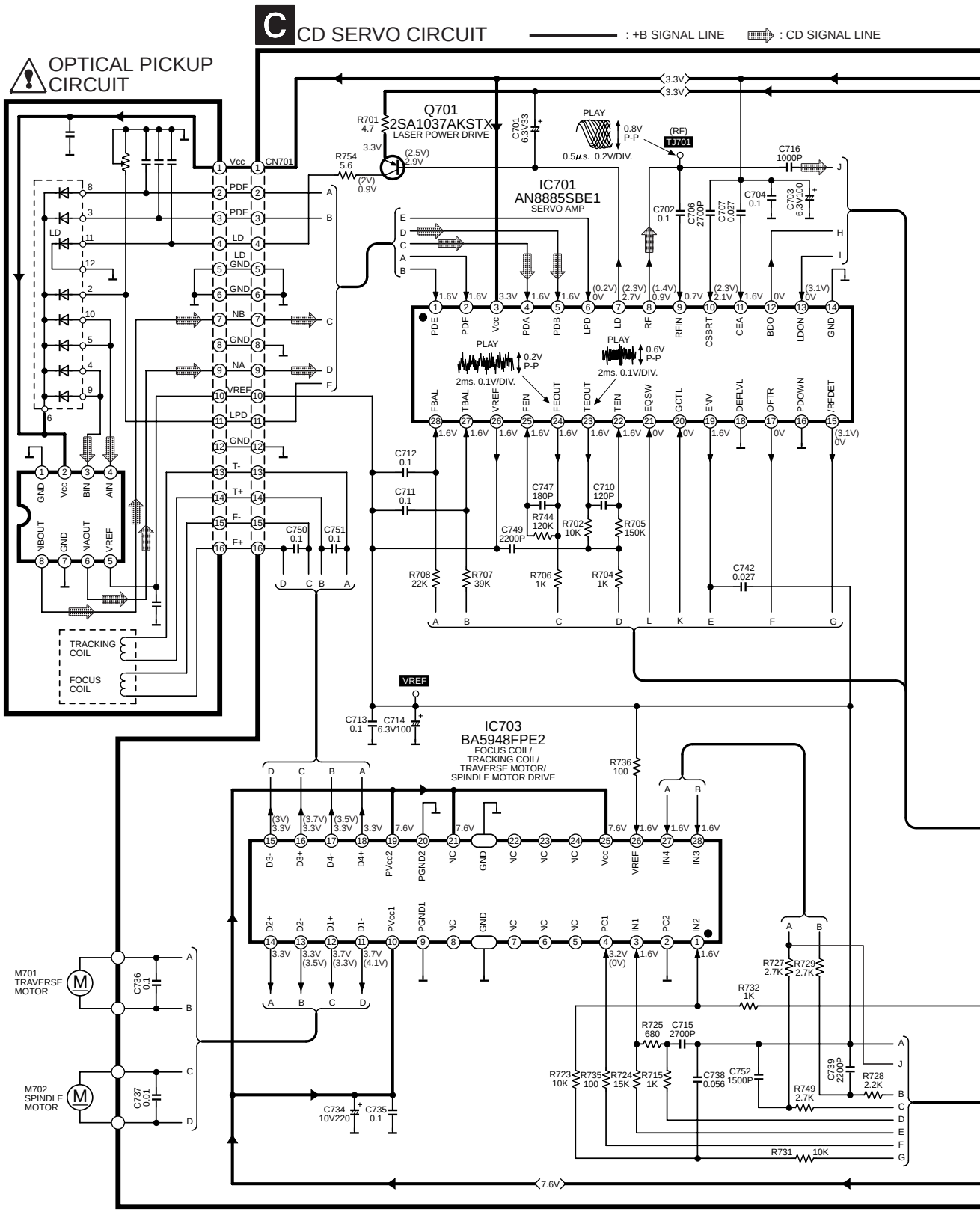
SCHEMATIC DIAGRAM-5

## A MD SERVO CIRCUIT

: CD SIGNAL LINE
: +B SIGNAL LINE
: MD SIGNAL LINE
: MD RECORD SIGNAL LINE

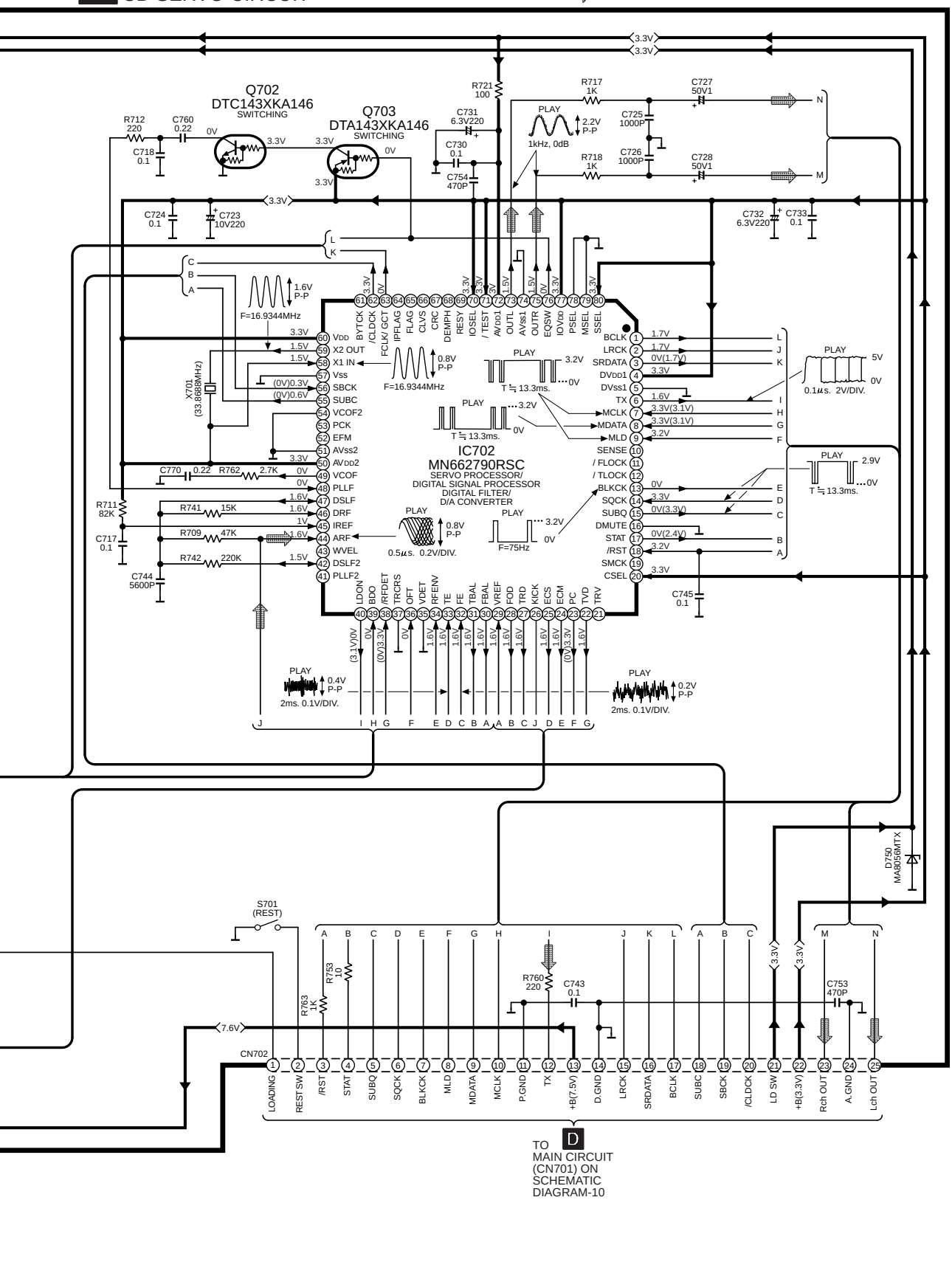


SCHEMATIC DIAGRAM-6

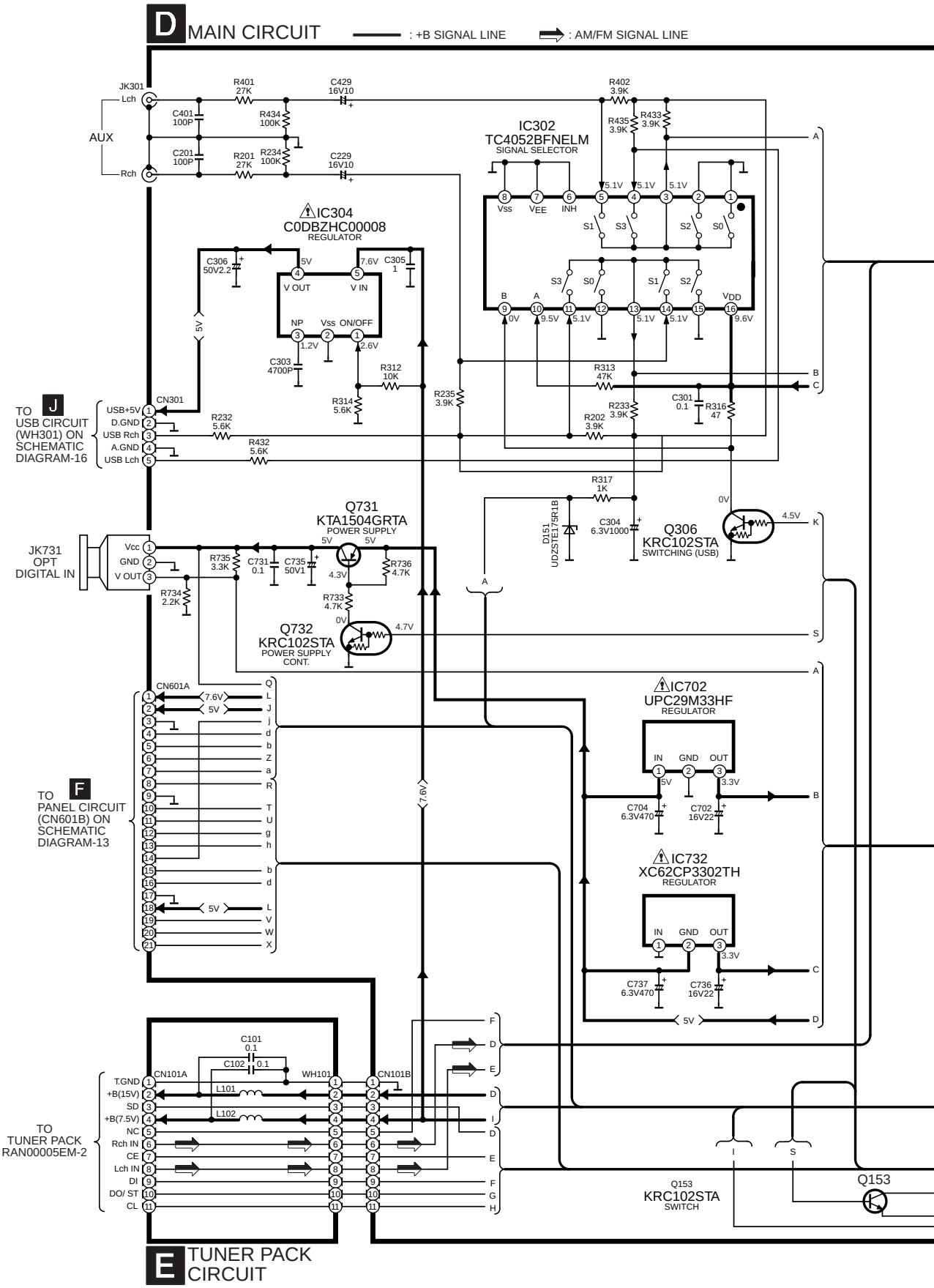


# C CD SERVO CIRCUIT

: +B SIGNAL LINE  : CD SIGNAL LINE



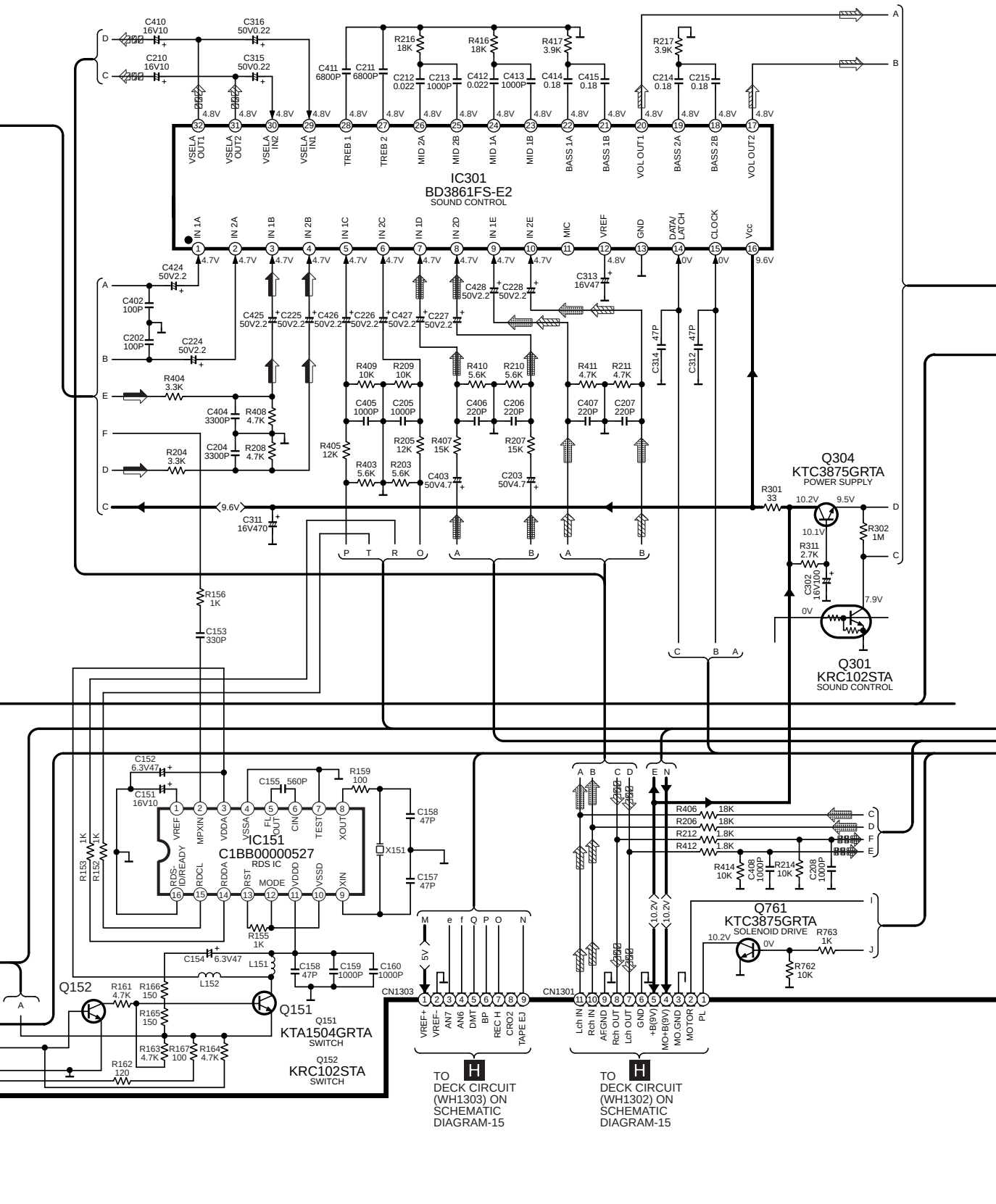
SCHEMATIC DIAGRAM-8



SCHEMATIC DIAGRAM-9

# D MAIN CIRCUIT

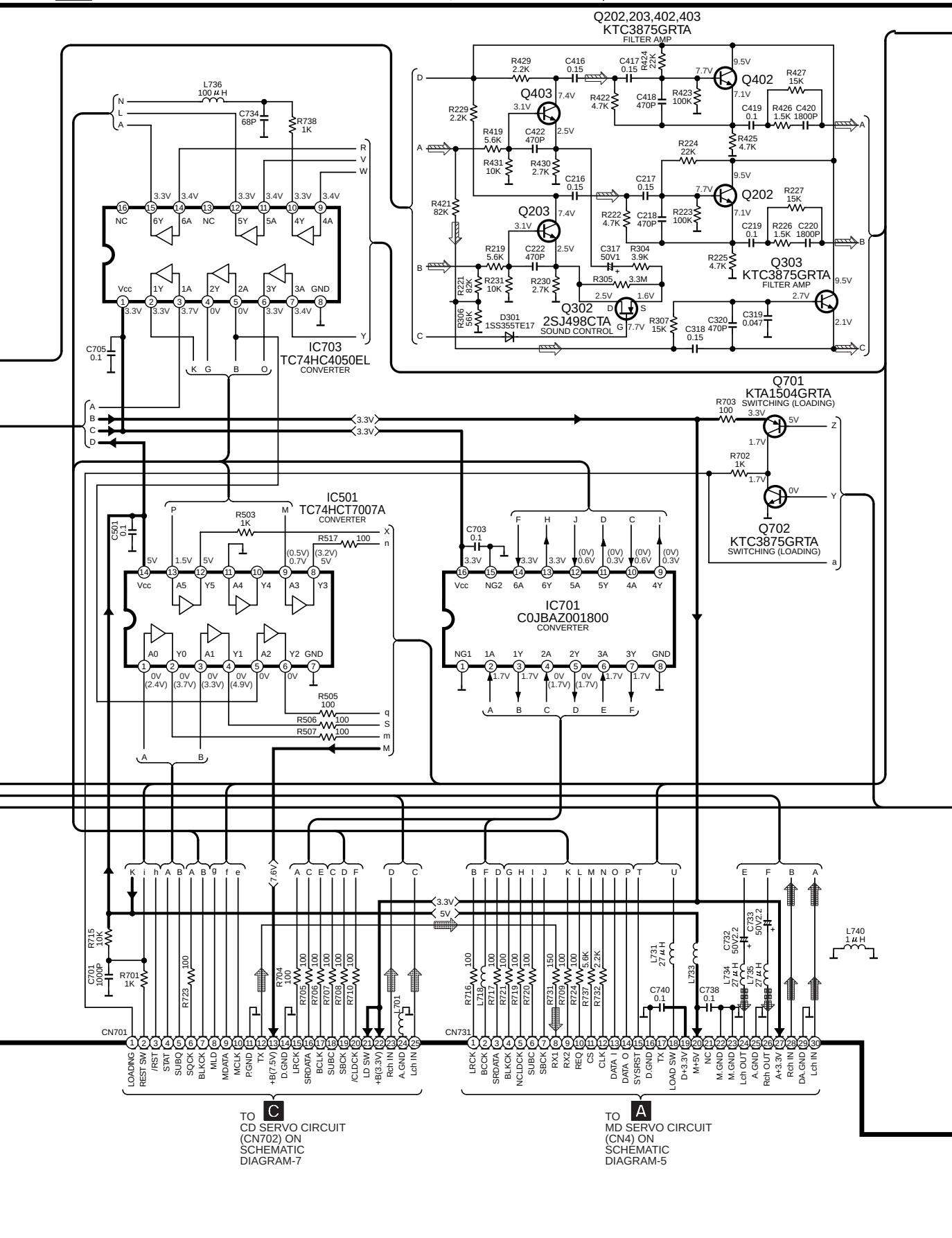
: MAIN SIGNAL LINE
: +B SIGNAL LINE
: AM/FM SIGNAL LINE
: PLAYBACK SIGNAL LINE
: RECORD SIGNAL LINE
: CD SIGNAL LINE
: MD SIGNAL LINE
: MD RECORD SIGNAL LINE



SCHEMATIC DIAGRAM-10

# D MAIN CIRCUIT

: +B SIGNAL LINE
: MAIN SIGNAL LINE
: CD SIGNAL LINE
: MD SIGNAL LINE
: MD RECORD SIGNAL LINE



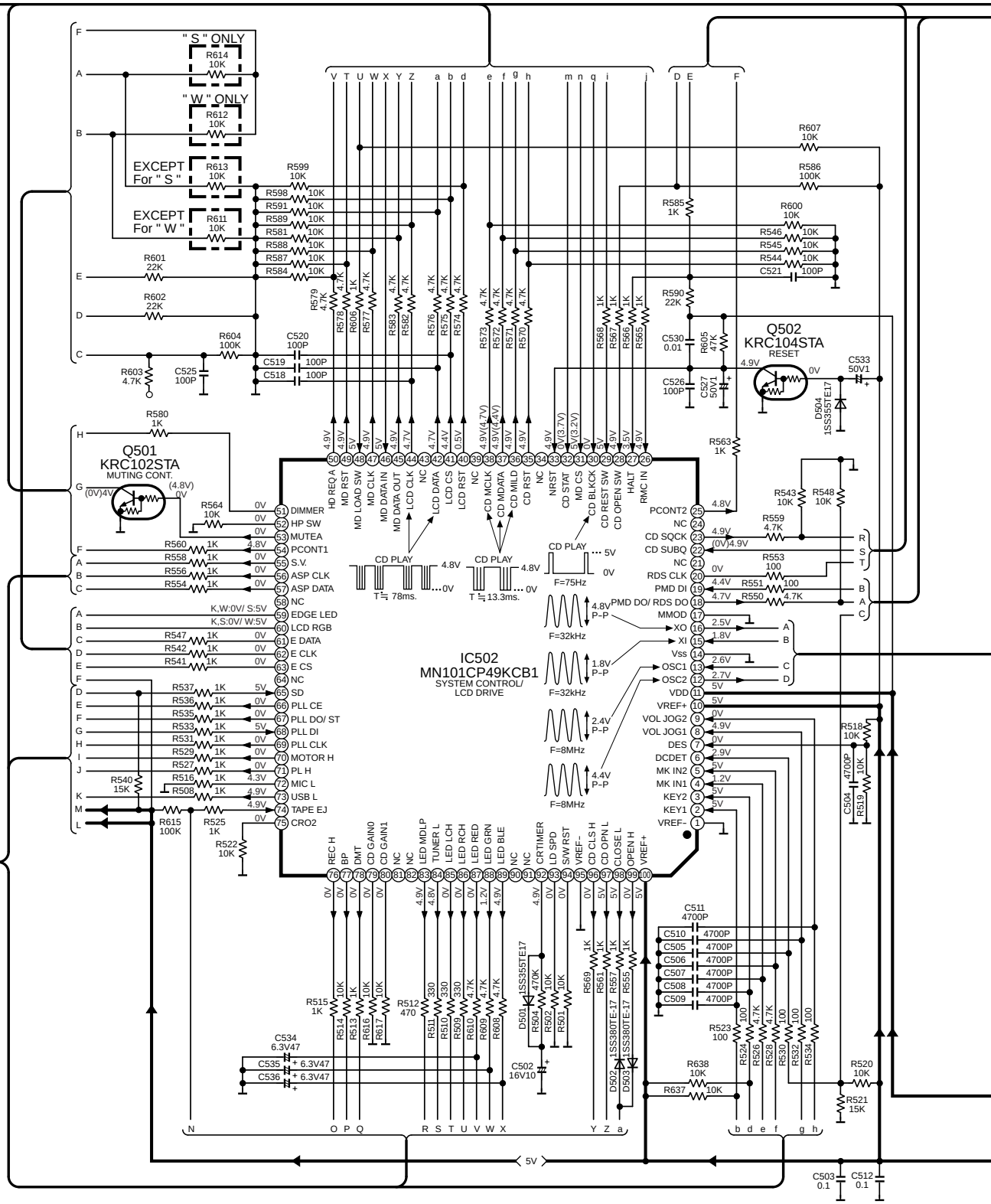

TO C CD SERVO CIRCUIT (CN702) ON SCHEMATIC DIAGRAM-7

TO A MD SERVO CIRCUIT (CN4) ON SCHEMATIC DIAGRAM-5

SCHEMATIC DIAGRAM-11

**D** MAIN CIRCUIT

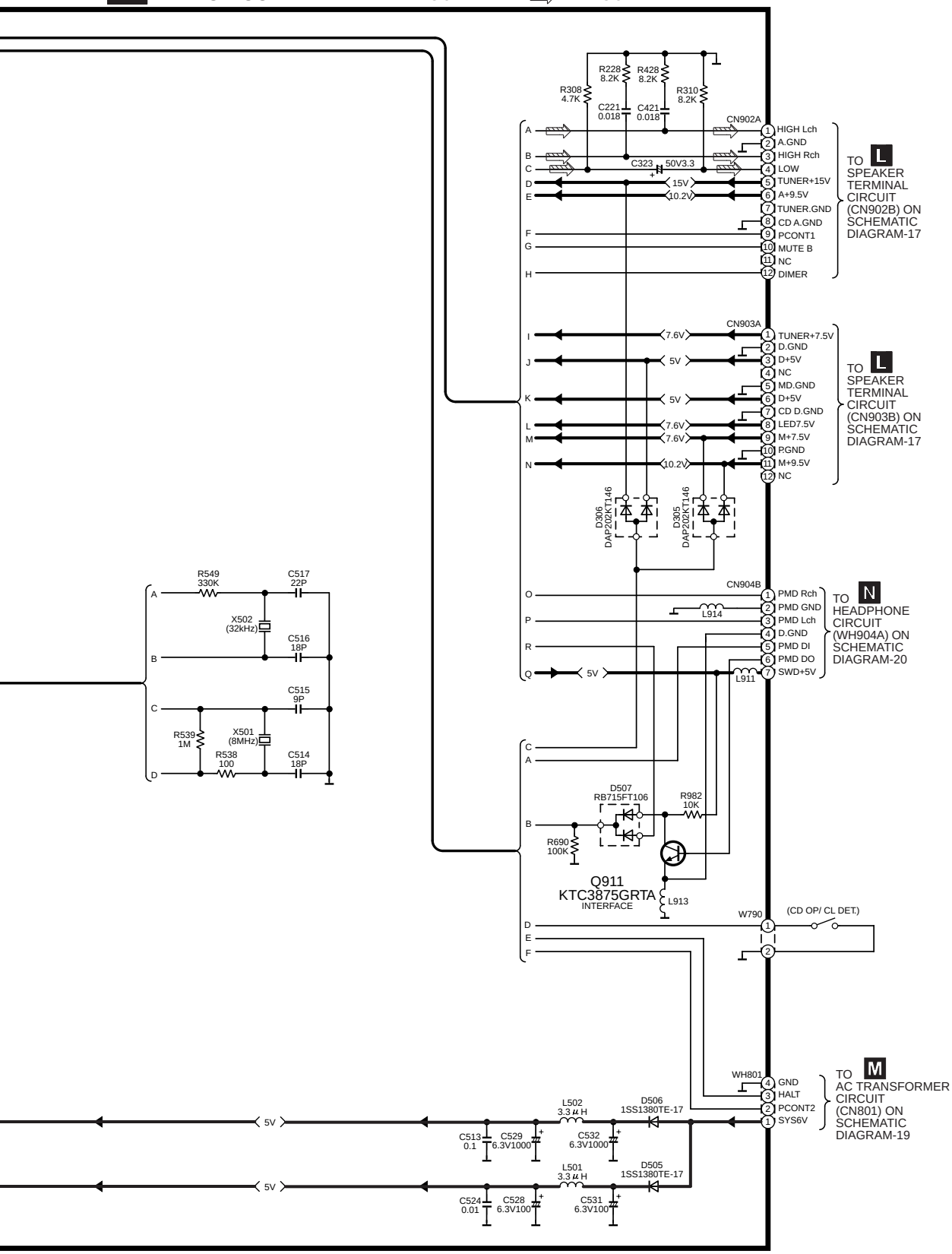
——— : +B SIGNAL LINE



SCHEMATIC DIAGRAM-12

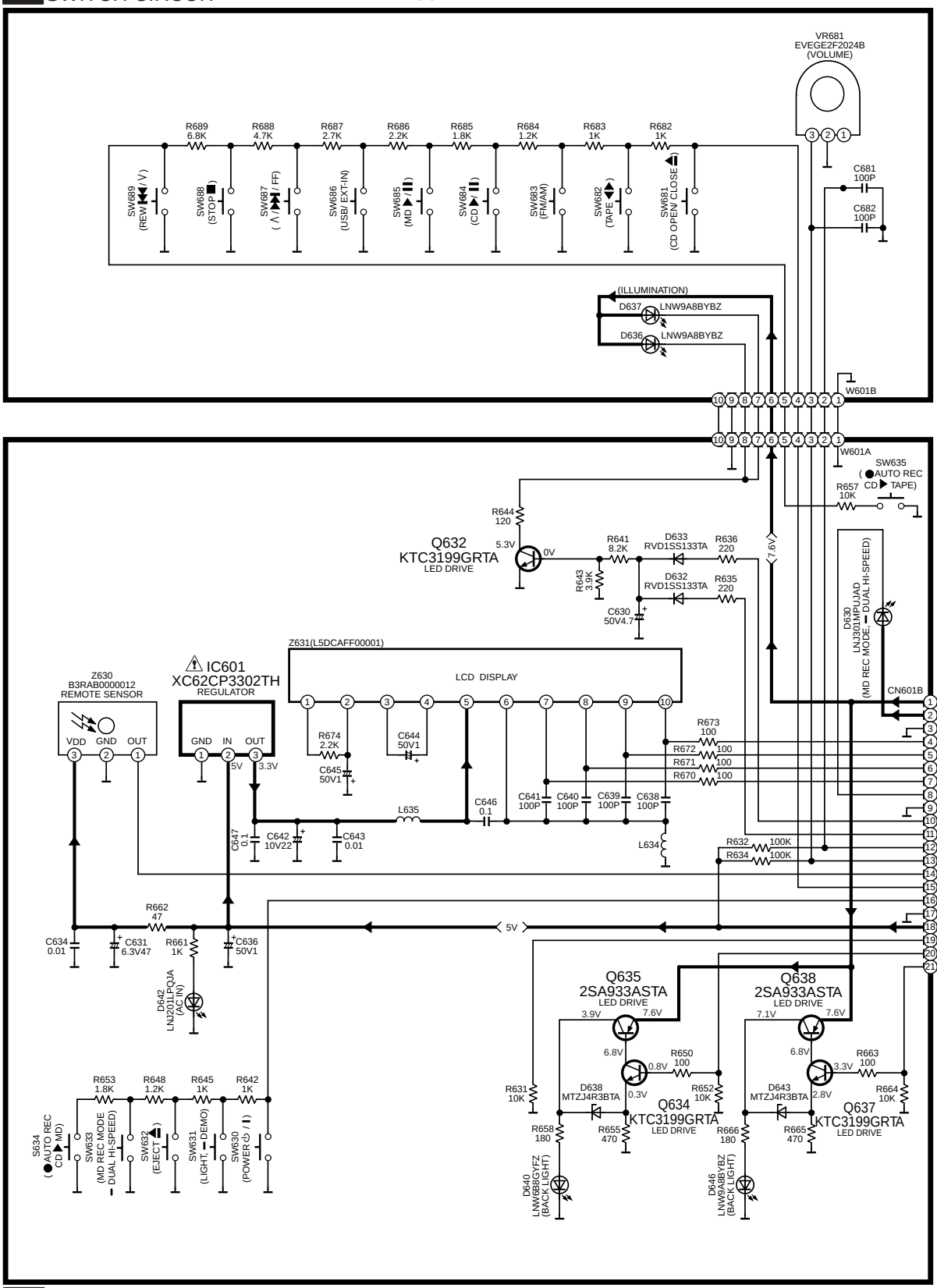
## D MAIN CIRCUIT

: +B SIGNAL LINE  : MAIN SIGNAL LINE



## G SWITCH CIRCUIT

:+B SIGNAL LINE




## F PANEL CIRCUIT

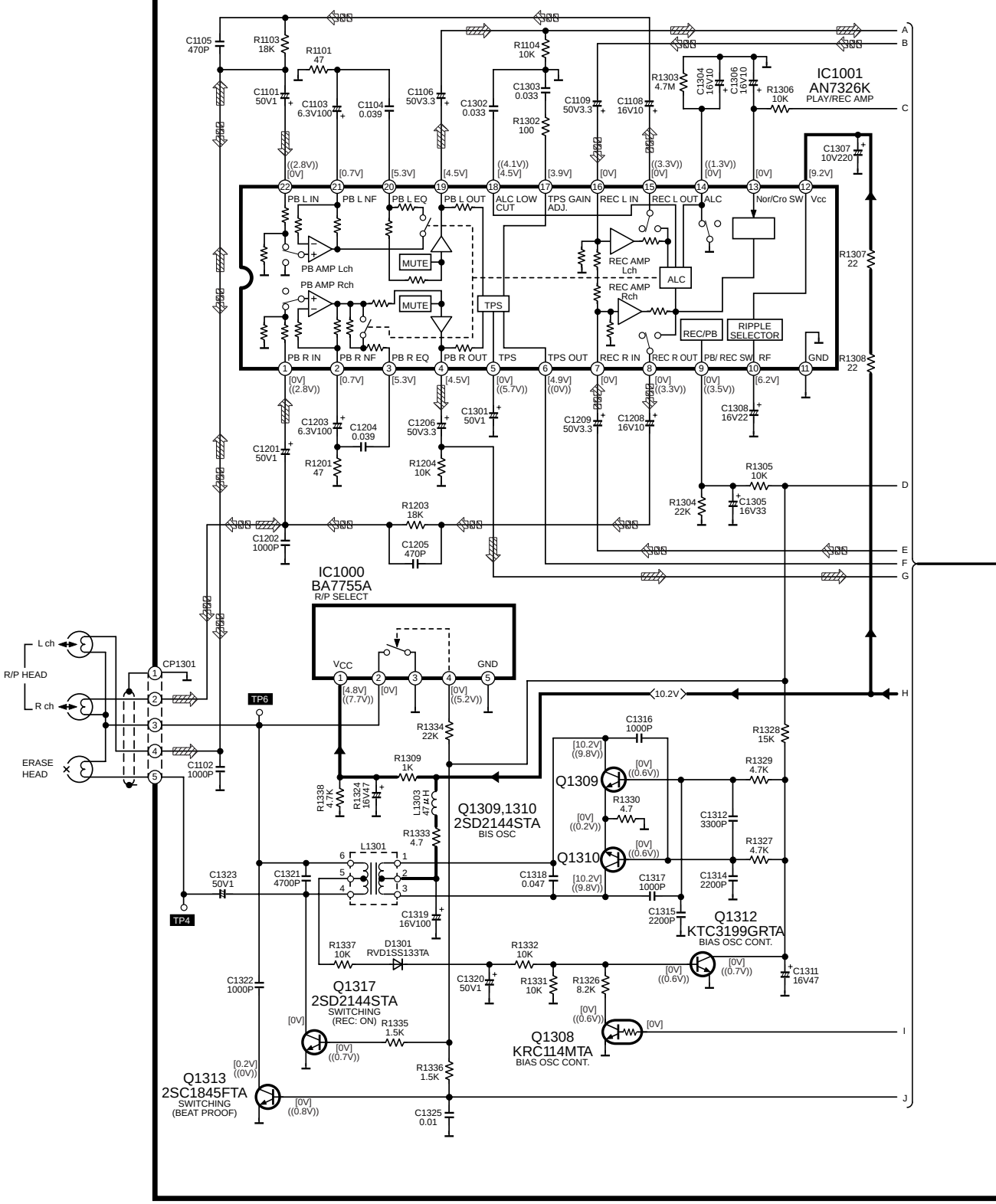
SCHEMATIC DIAGRAM-14

# H DECK CIRCUIT

: +B SIGNAL LINE

: PLAYBACK SIGNAL LINE

: RECORD SIGNAL LINE



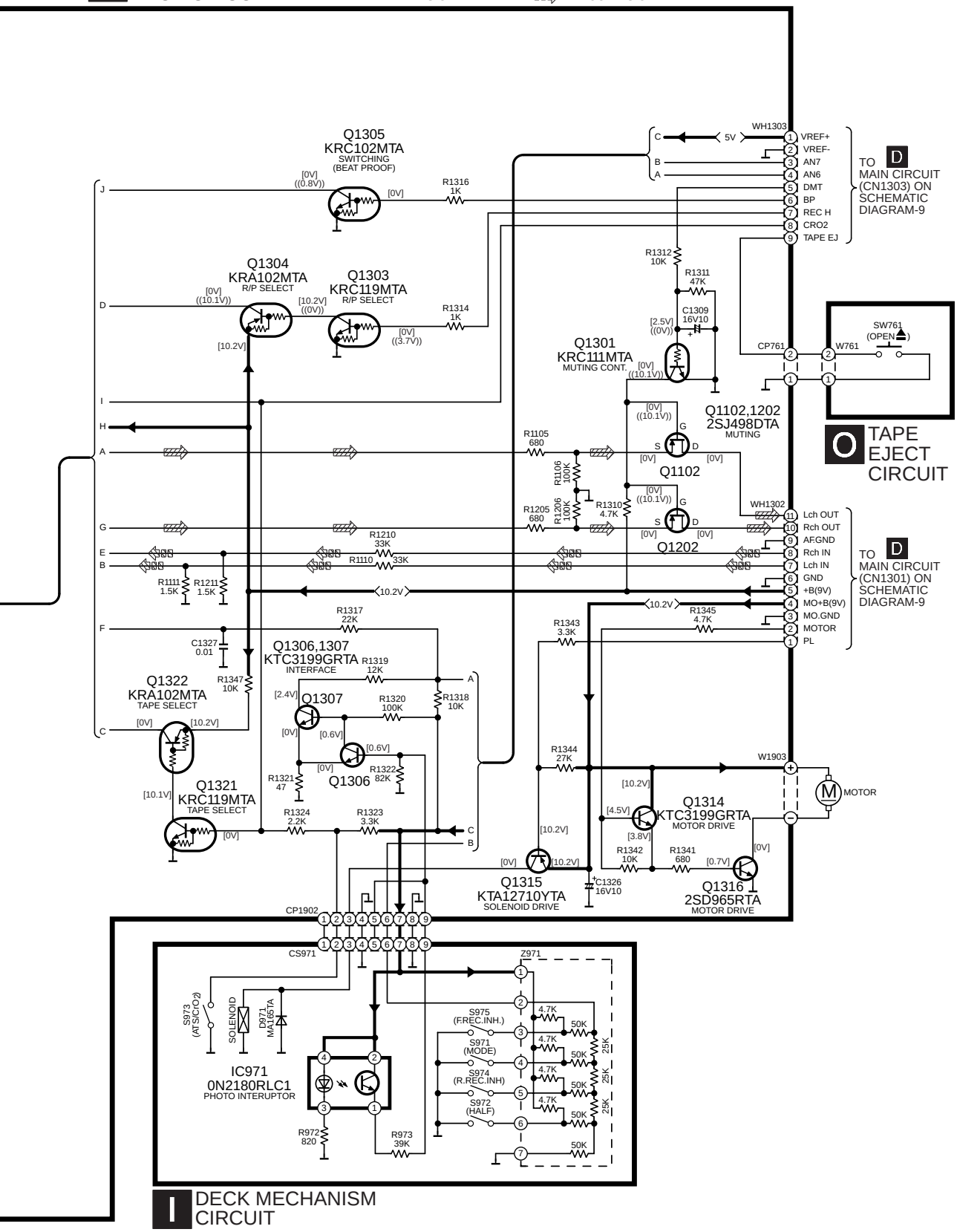
SCHEMATIC DIAGRAM-15

## H DECK CIRCUIT

: +B SIGNAL LINE

: PLAYBACK SIGNAL LINE

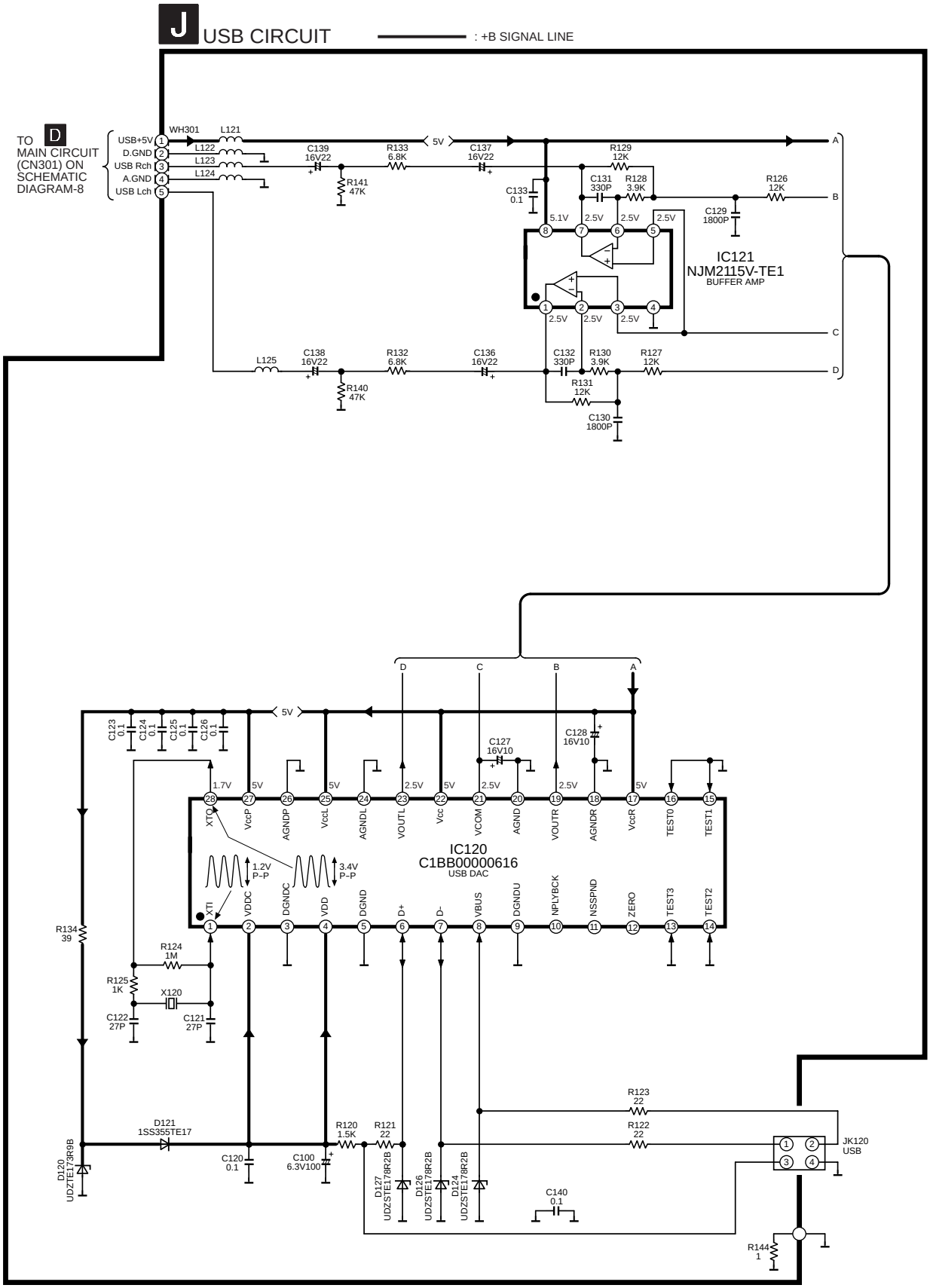
: RECORD SIGNAL LINE



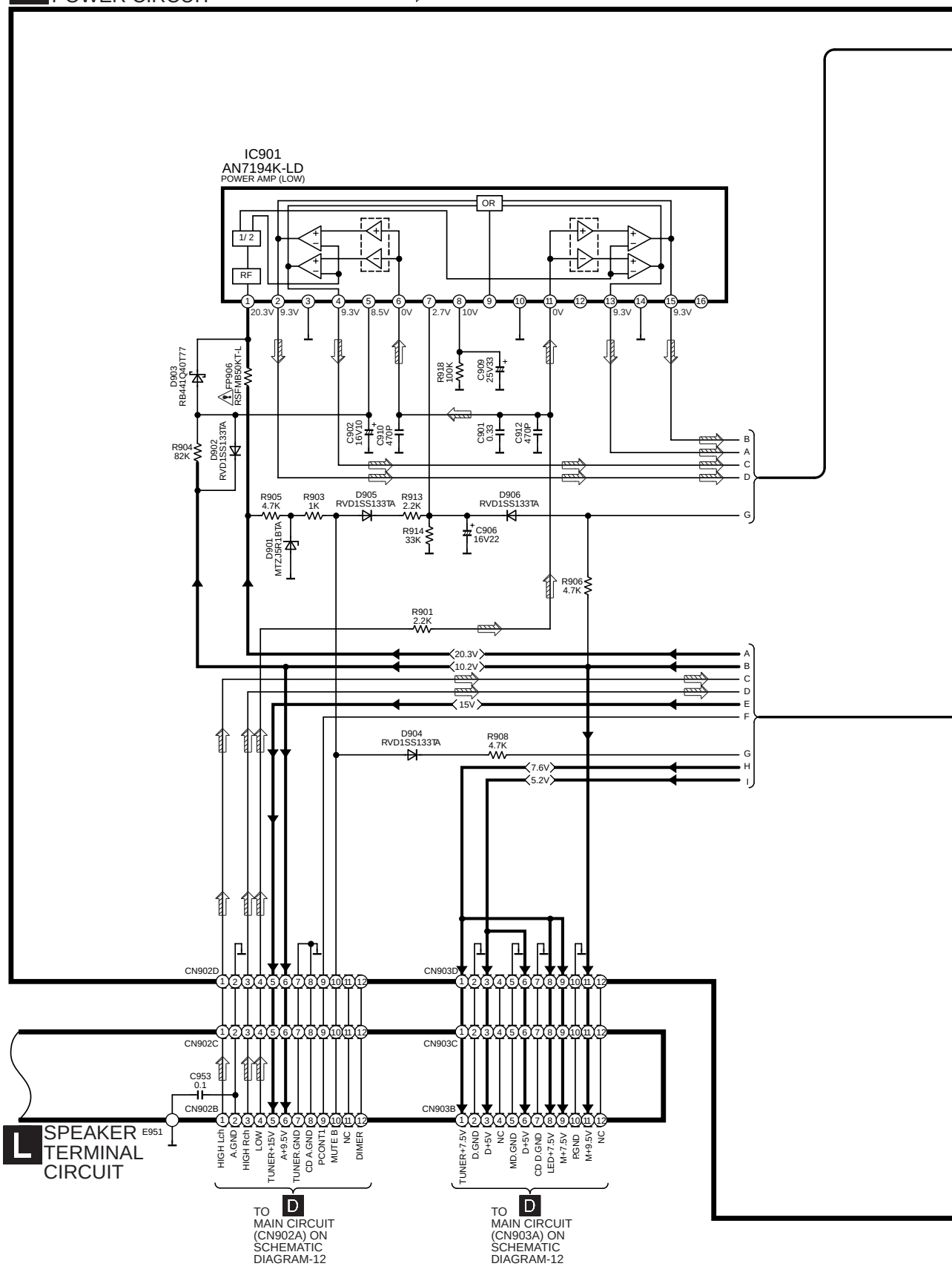

## O TAPE EJECT CIRCUIT

## I DECK MECHANISM CIRCUIT

SCHEMATIC DIAGRAM-16

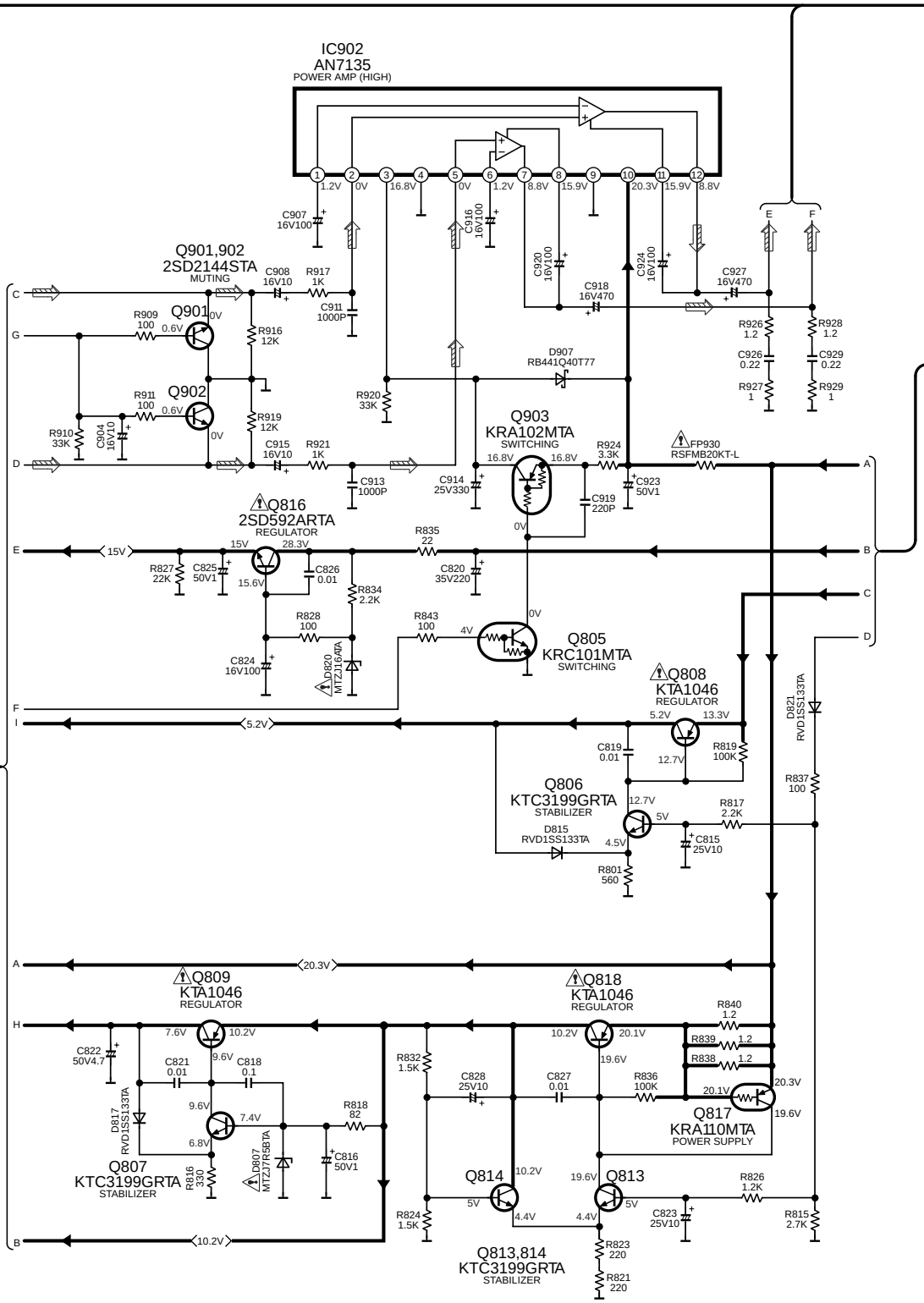


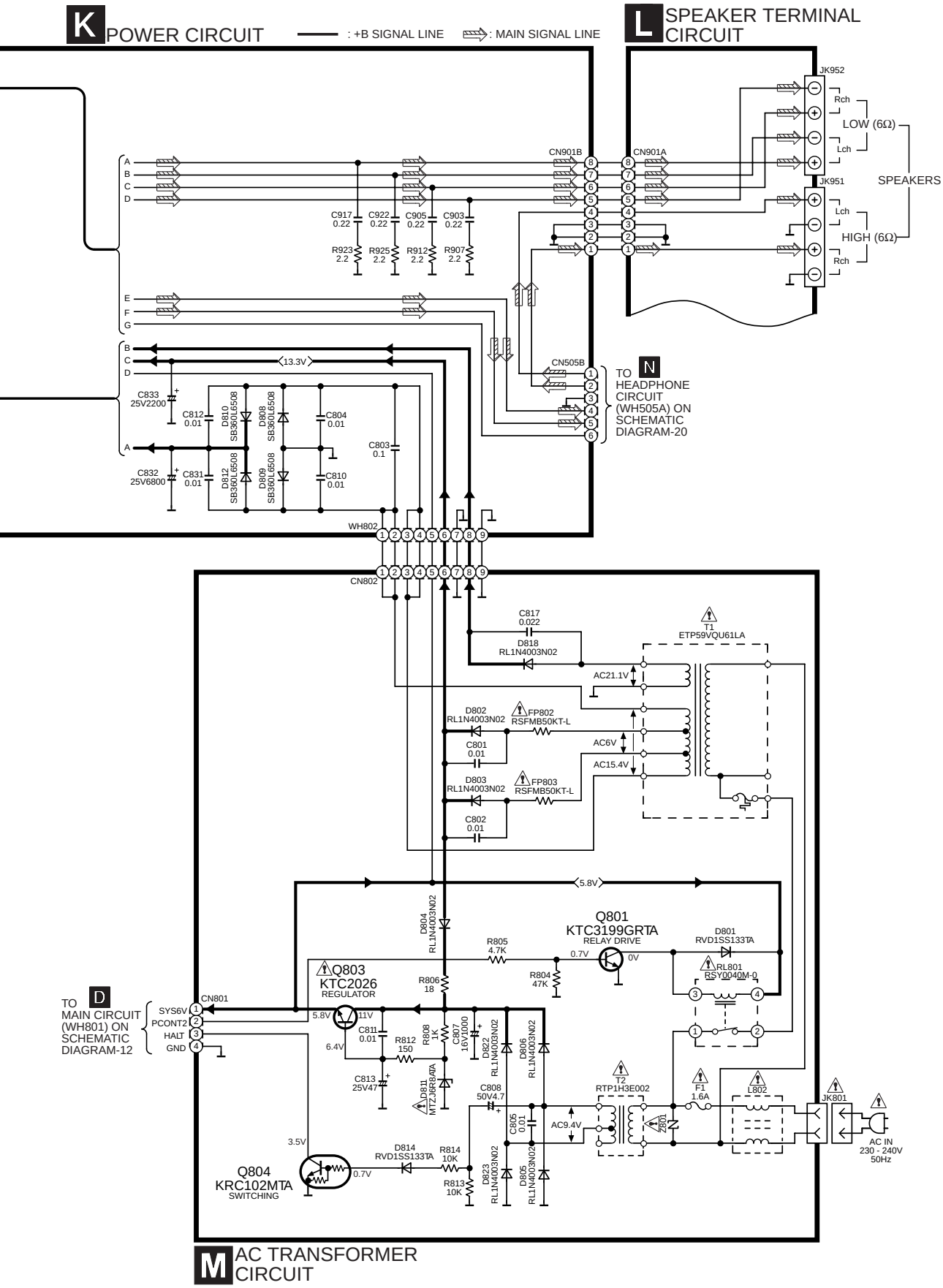
K POWER CIRCUIT —— : +B SIGNAL LINE ⇨ : MAIN SIGNAL LINE



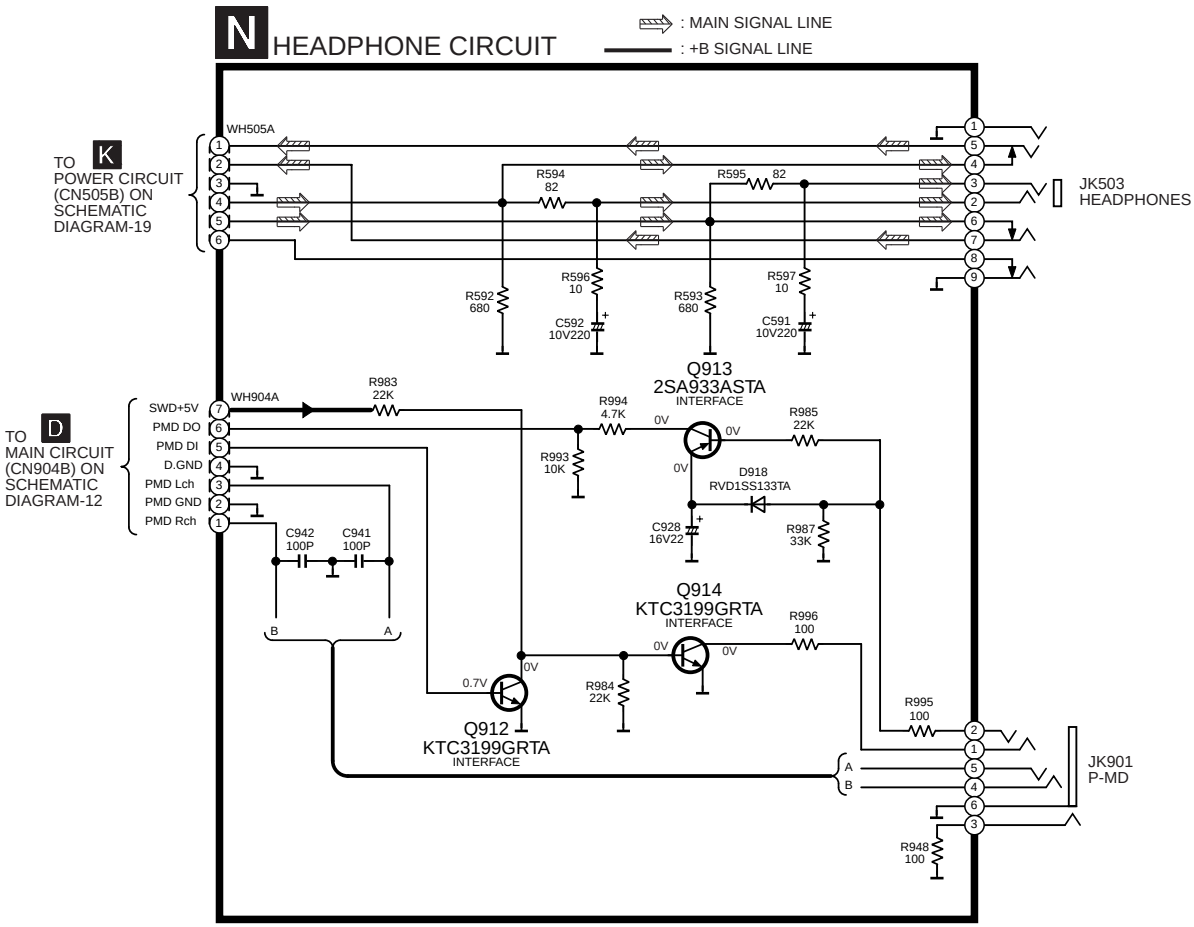
# K POWER CIRCUIT

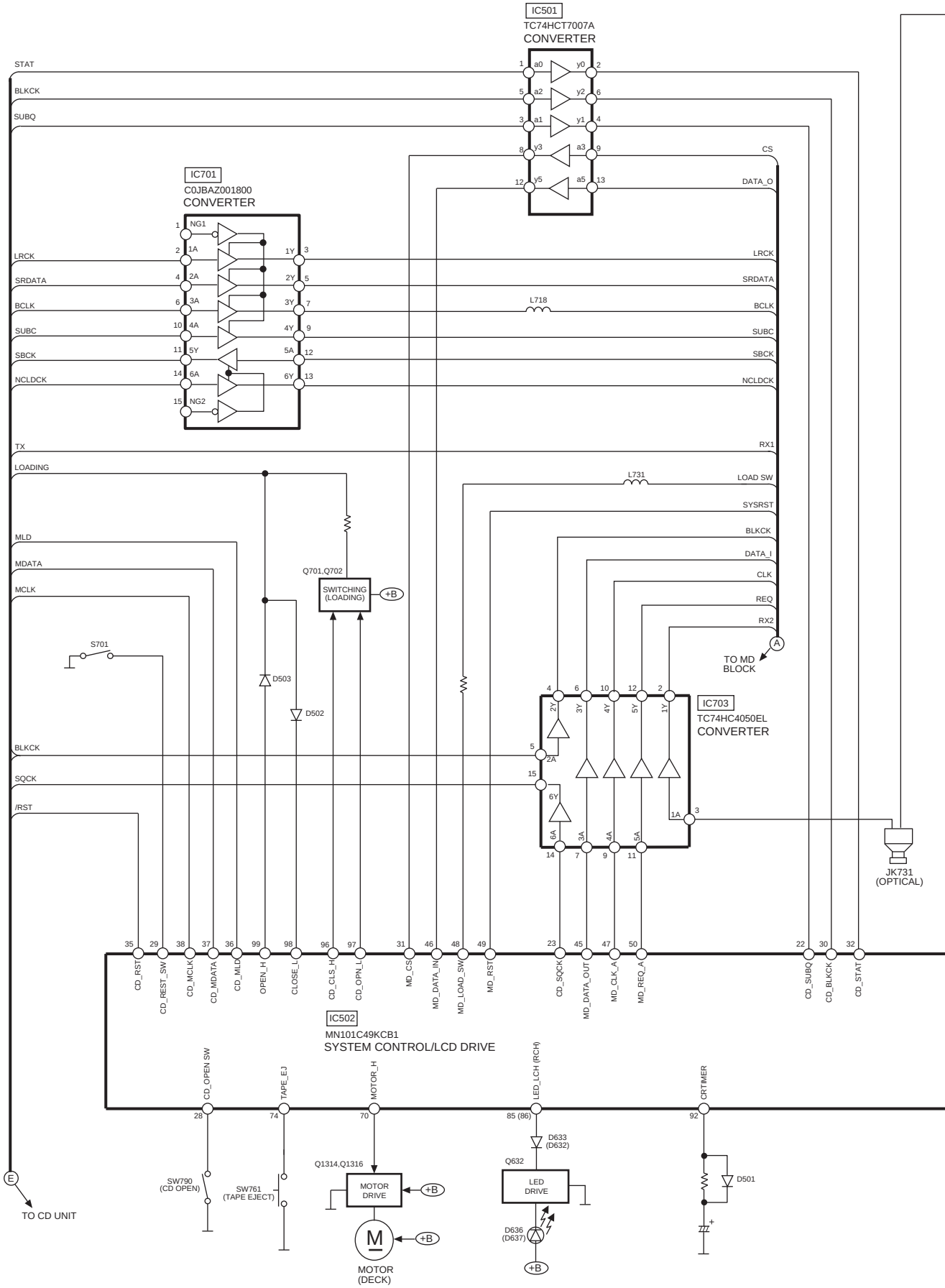
: +B SIGNAL LINE  : MAIN SIGNAL LINE

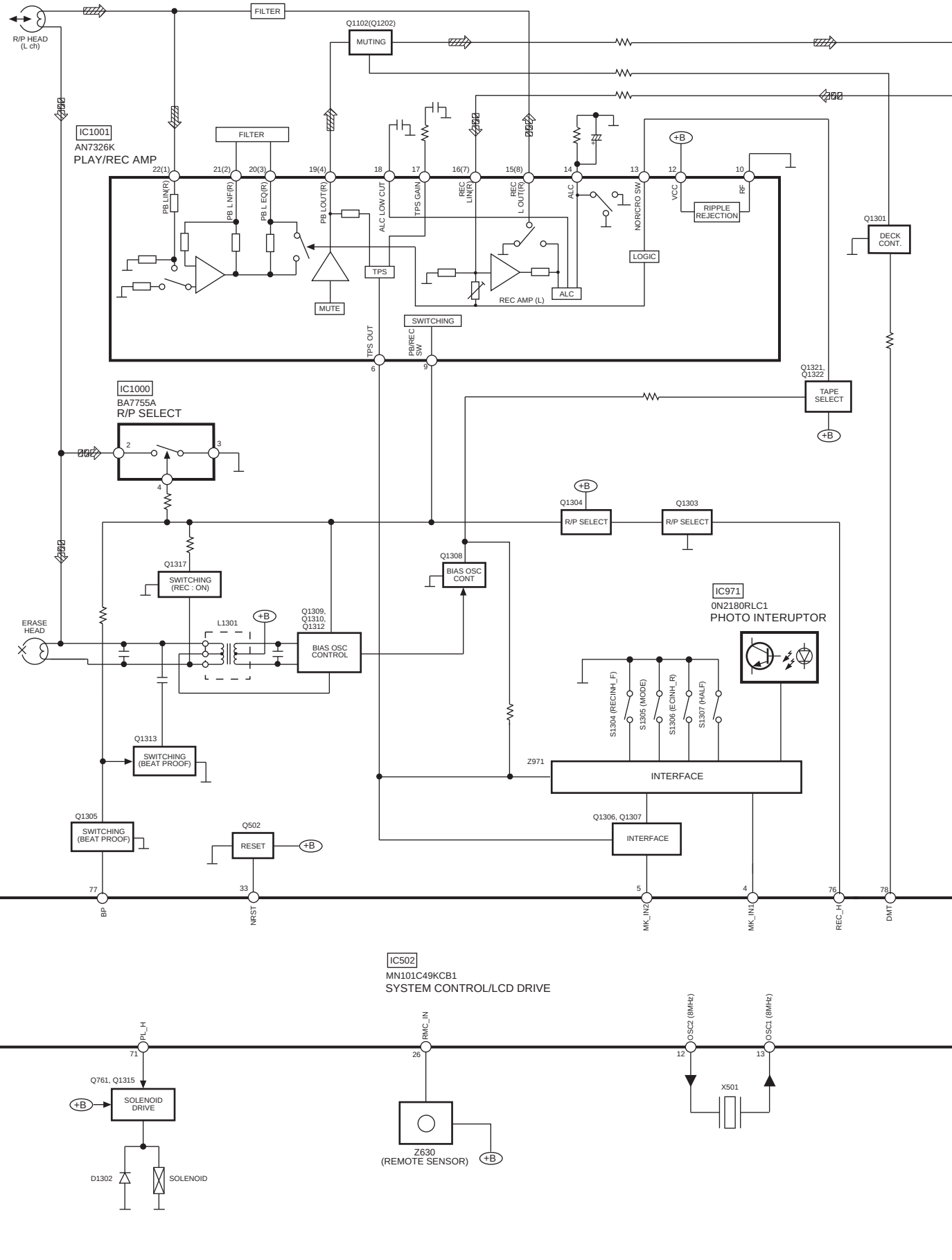


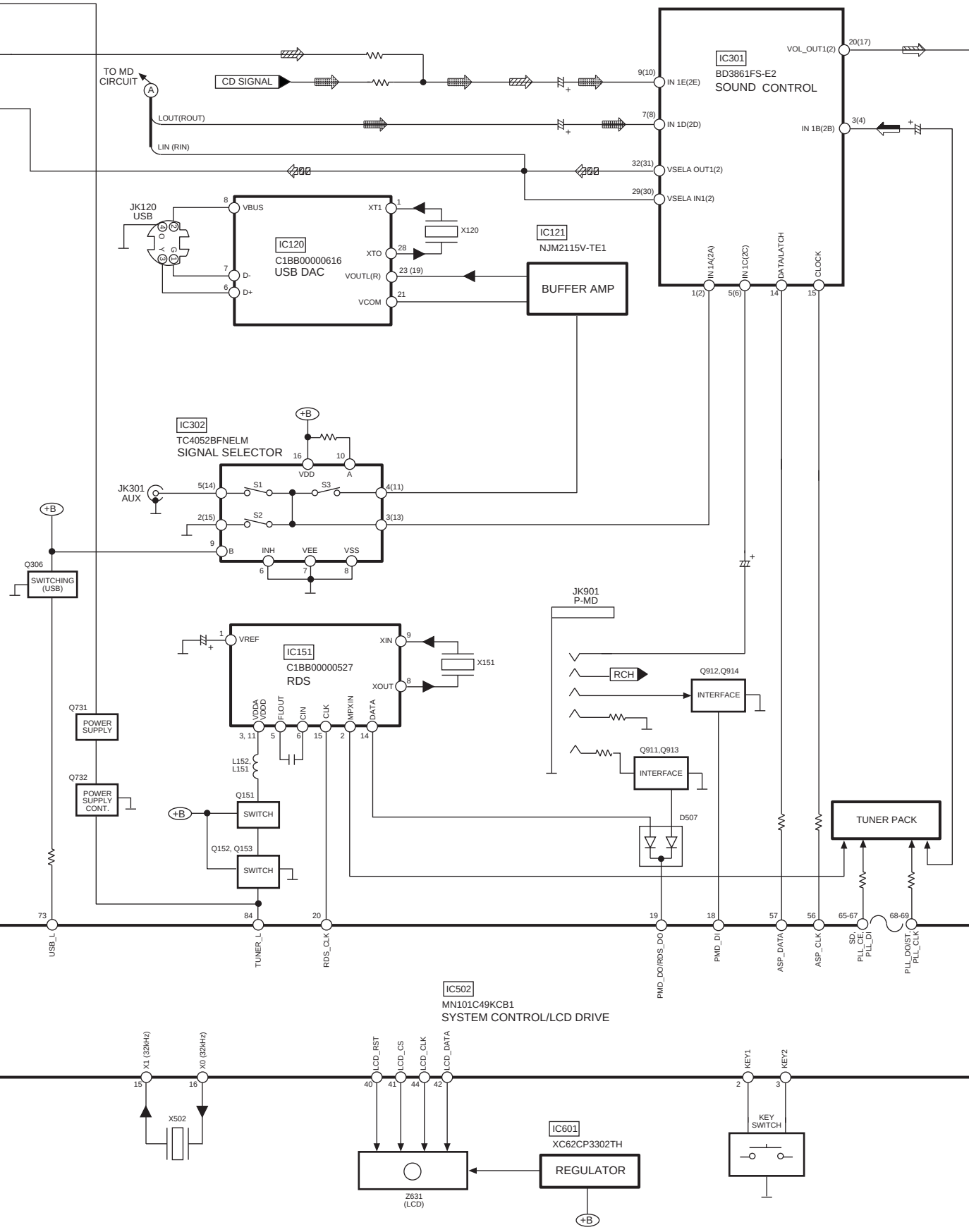

K POWER CIRCUIT
: +B SIGNAL LINE
: MAIN SIGNAL LINE
L SPEAKER TERMINAL CIRCUIT
JK952
Rch
LOW (6Ω)
Lch
JK951
SPEAKERS
Lch
HIGH (6Ω)
Rch
CN901B
CN901A
C917 0.22
C922 0.22
C905 0.22
C903 0.22
R923 2.2
R925 2.2
R912 2.2
R907 2.2
13.3V
C833 25V2200
C812 0.01
D810 SB360L6508
D808 SB360L6508
C804 0.01
C803 0.1
C832 25V6800
C831 0.01
D812 SB360L6508
D809 SB360L6508
C810 0.01
CN505B
TO N HEADPHONE CIRCUIT (WH505A) ON SCHEMATIC DIAGRAM-20
WH802
CN802
C817 0.022
D818 RL1N4003N02
T1 ETP59VQU61LA
AC21.1V
D802 RL1N4003N02
FP802 RSFMB50KT-L
AC6V
AC15.4V
C801 0.01
D803 RL1N4003N02
FP803 RSFMB50KT-L
C802 0.01
5.8V
D804 RL1N4003N02
Q801 KTC3199GRTA RELAY DRIVE
R805 4.7K
0.7V
0V
D801 RVD1SS133TA
RL801 RSY0040M-0
Q803 KTC2026 REGULATOR
R806 18
R804 47K
TO D MAIN CIRCUIT (WH801) ON SCHEMATIC DIAGRAM-12
CN801
SYS6V
PCONT2
HALT
GND
5.8V
11V
C811 0.01
6.4V
R812 150
R808 1K
C807 16V1000
D822 RL1N4003N02
D806 RL1N4003N02
C813 25V47
D811 MTZJ6R8AA
C808 50V4.7
T2 RTP1H3E002
F1 1.6A
L802
JK801
AC IN 230 - 240V 50Hz
C805 0.01
AC9.4V
Z801
3.5V
D814 RVD1SS133TA
R814 10K
0.7V
Q804 KRC102MTA SWITCHING
R813 10K
D823 RL1N4003N02
D805 RL1N4003N02
M AC TRANSFORMER CIRCUIT

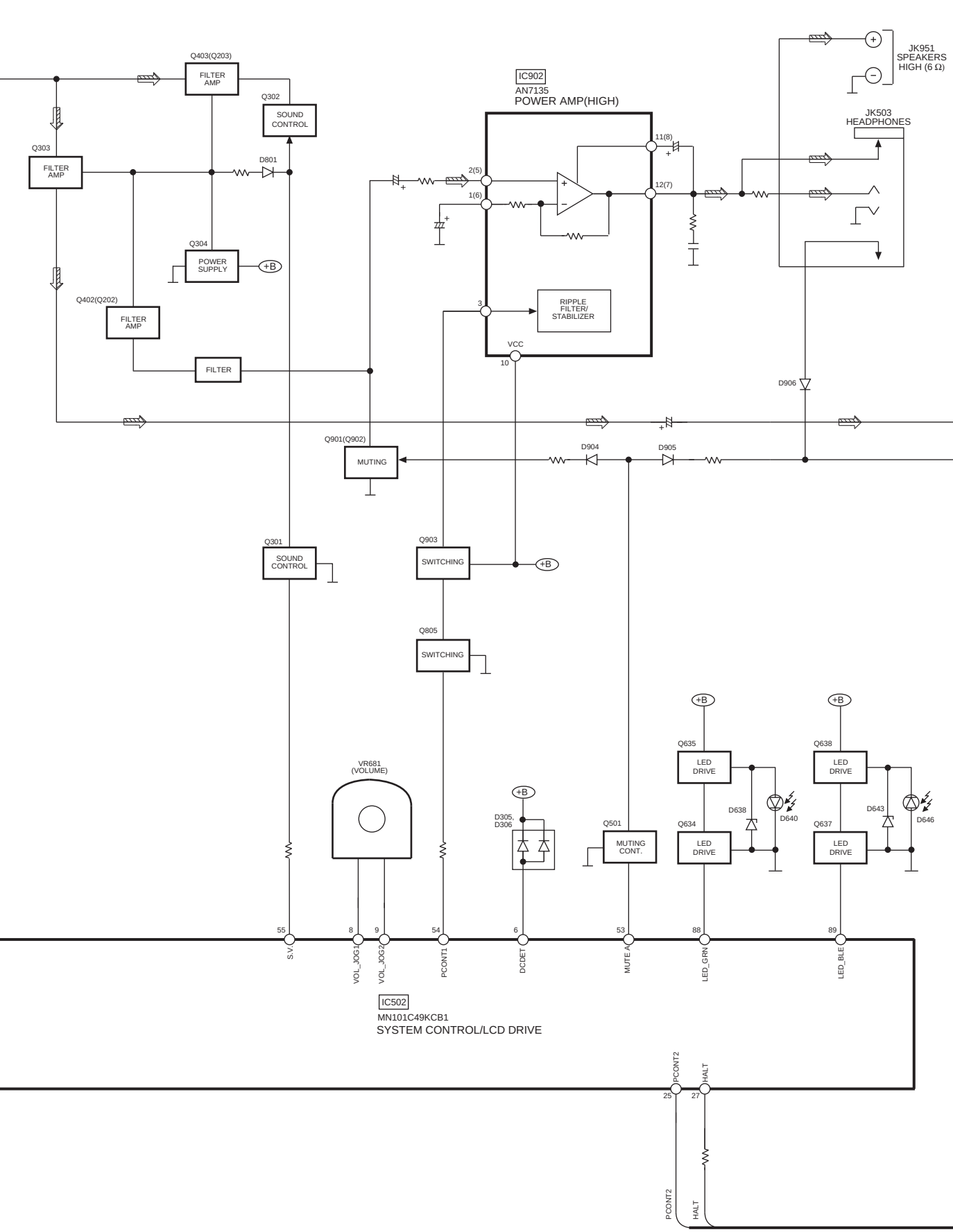
SCHEMATIC DIAGRAM-20




IC501
TC74HCT7007A
CONVERTER
IC701
C0JBAZ001800
CONVERTER
IC703
TC74HC4050EL
CONVERTER
IC502
MN101C49KCB1
SYSTEM CONTROL/LCD DRIVE
STAT
BLKCK
SUBQ
LRCK
SRDATA
BCLK
SUBC
SBCK
NCLDCK
TX
LOADING
MLD
MDATA
MCLK
/RST
SQCK
CS
DATA_O
RX1
LOAD SW
SYSRST
DATA_I
CLK
REQ
RX2
L718
L731
TO MD BLOCK
JK731 (OPTICAL)
S701
D503
D502
Q701,Q702
SWITCHING (LOADING)
+B
CD_RST
CD_REST_SW
CD_MCLK
CD_MDATA
CD_MLD
OPEN_H
CLOSE_L
CD_CLS_H
CD_OPN_L
MD_CS
MD_DATA_IN
MD_LOAD_SW
MD_RST
CD_SQCK
MD_DATA_OUT
MD_CLK_A
MD_REQ_A
CD_SUBQ
CD_BLKCK
CD_STAT
CD_OPEN SW
TAPE_EJ
MOTOR_H
LED_LCH (RCH)
QRTIMER
SW790 (CD OPEN)
SW761 (TAPE EJECT)
Q1314,Q1316
MOTOR DRIVE
MOTOR (DECK)
D633 (D632)
Q632
LED DRIVE
D636 (D637)
D501
TO CD UNIT


R/P HEAD (L ch)
FILTER
Q1102(Q1202)
MUTING
IC1001
AN7326K
PLAY/REC AMP
22(1)
21(2)
20(3)
19(4)
18
17
16(7)
15(8)
14
13
12
10
PB LIN(R)
PB L NF(R)
PB L EQ(R)
PB LOUT(R)
ALC LOW CUT
TPS GAIN
REC LIN(R)
REC L OUT(R)
ALC
NOR/CRO SW
VCC
RF
+B
RIPPLE REJECTION
LOGIC
TPS
MUTE
REC AMP (L)
ALC
SWITCHING
TPS OUT
PB/REC SW
6
9
Q1301
DECK CONT.
Q1321, Q1322
TAPE SELECT
IC1000
BA7755A
R/P SELECT
2
3
4
Q1304
R/P SELECT
Q1303
R/P SELECT
Q1308
BIAS OSC CONT
Q1317
SWITCHING (REC : ON)
IC971
0N2180RLC1
PHOTO INTERUPTOR
ERASE HEAD
L1301
Q1309, Q1310, Q1312
BIAS OSC CONTROL
S1304 (RECINH_F)
S1305 (MODE)
S1306 (ECINH_R)
S1307 (HALF)
Q1313
SWITCHING (BEAT PROOF)
Z971
INTERFACE
Q1305
SWITCHING (BEAT PROOF)
Q502
RESET
Q1306, Q1307
INTERFACE
77
33
5
4
76
78
BP
NRST
MK_IN2
MK_IN1
REC_H
DMT
IC502
MN101C49KCB1
SYSTEM CONTROL/LCD DRIVE
71
26
12
13
PL_H
RMC_IN
OSC2 (8MHz)
OSC1 (8MHz)
Q761, Q1315
SOLENOID DRIVE
X501
Z630
(REMOTE SENSOR)
D1302
SOLENOID

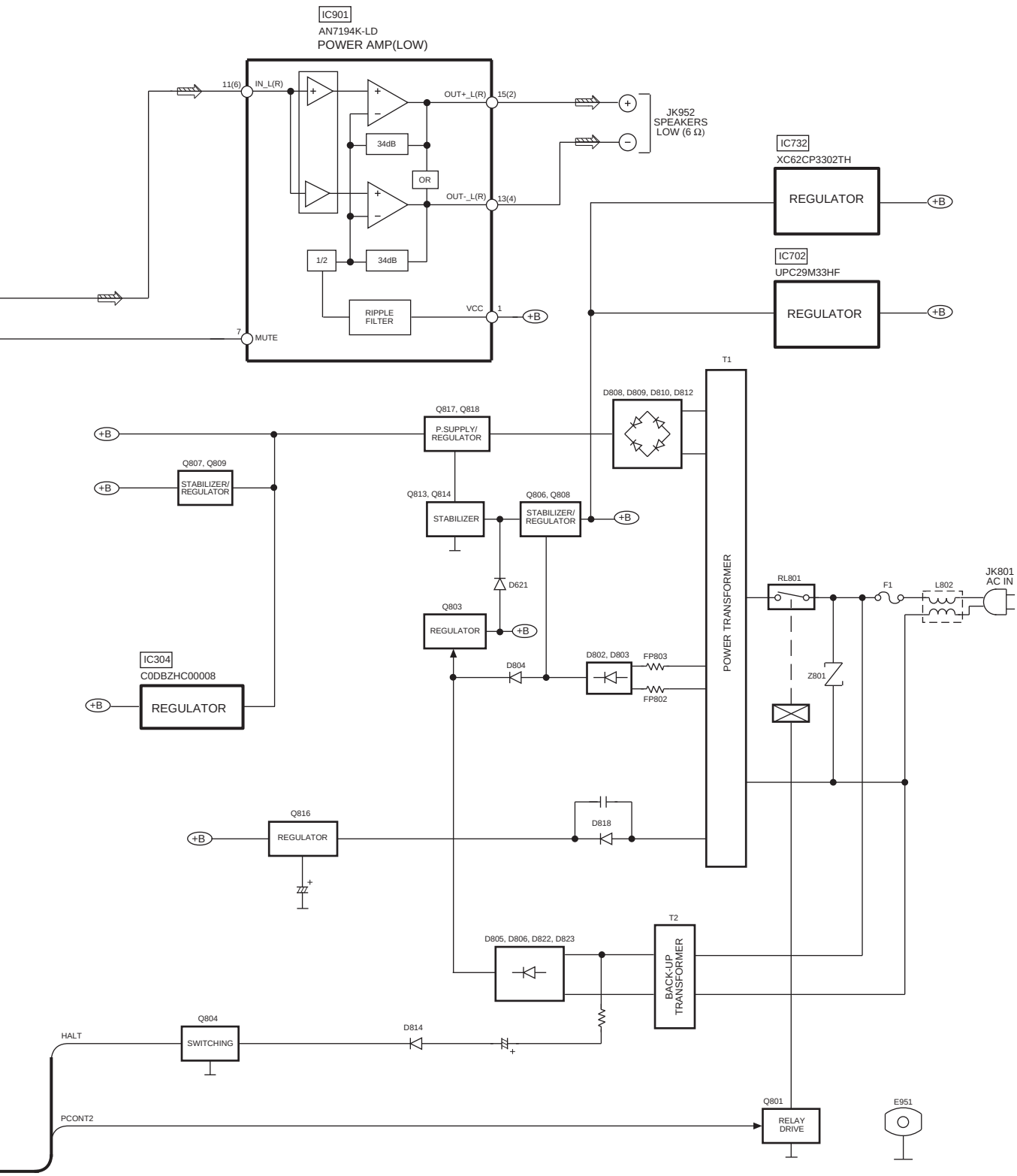

TO MD CIRCUIT
A
CD SIGNAL
LOUT(ROUT)
LIN (RIN)
IC301
BD3861FS-E2
SOUND CONTROL
9(10) IN 1E(2E)
7(8) IN 1D(2D)
32(31) VSELA OUT1(2)
29(30) VSELA IN1(2)
VOL_OUT1(2) 20(17)
IN 1B(2B) 3(4)
IN 1A(2A) 1(2)
IN 1C(2C) 5(6)
DATA/LATCH 14
CLOCK 15
JK120
USB
VBUS 8
D- 7
D+ 6
IC120
C1BB00000616
USB DAC
XT1 1
X120
XTO 28
VOUTL(R) 23 (19)
VCOM 21
IC121
NJM2115V-TE1
BUFFER AMP
IC302
TC4052BFNELM
SIGNAL SELECTOR
+B
VDD 16
A 10
JK301
AUX
5(14) S1 S3 4(11)
2(15) S2 3(13)
B 9
INH 6
VEE 7
VSS 8
Q306
SWITCHING (USB)
JK901
P-MD
IC151
C1BB00000527
RDS
VREF 1
XIN 9
X151
XOUT 8
VDDA VDDD 3, 11
FLOUT 5
CIN 6
CLK 15
MPXIN 2
DATA 14
RCH
Q912,Q914
INTERFACE
Q911,Q913
INTERFACE
Q731
POWER SUPPLY
Q732
POWER SUPPLY CONT.
L152, L151
Q151
SWITCH
Q152, Q153
SWITCH
D507
TUNER PACK
73 USB_L
84 TUNER_L
20 RDS_CLK
19 PMD_DO/RDS_DO
18 PMD_DI
57 ASP_DATA
56 ASP_CLK
65-67 SD, PLL_CE, PLL_DI
68-69 PLL_DO/ST, PLL_CLK
IC502
MN101C49KCB1
SYSTEM CONTROL/LCD DRIVE
X1 (32kHz) 15
X0 (32kHz) 16
X502
LCD_RST 40
LCD_CS 41
LCD_CLK 44
LCD_DATA 42
KEY1 2
KEY2 3
KEY SWITCH
IC601
XC62CP3302TH
REGULATOR
Z631 (LCD)
+B

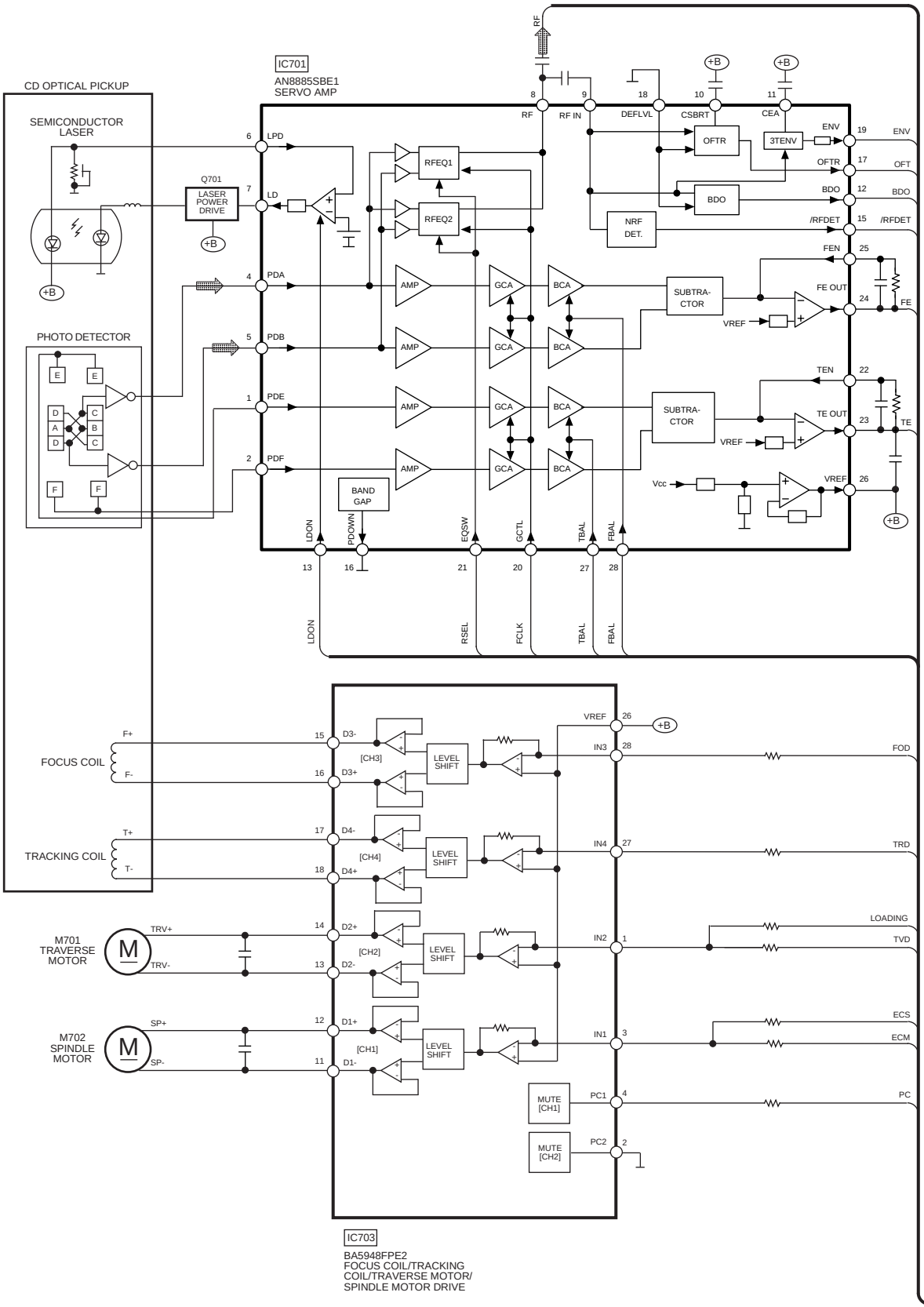

Q403(Q203)
FILTER AMP
Q302
SOUND CONTROL
Q303
FILTER AMP
D801
Q304
POWER SUPPLY
+B
Q402(Q202)
FILTER AMP
FILTER
IC902
AN7135
POWER AMP(HIGH)
2(5)
1(6)
11(8)
12(7)
3
RIPPLE FILTER/ STABILIZER
VCC
10
JK951
SPEAKERS
HIGH (6 Ω)
JK503
HEADPHONES
D906
Q901(Q902)
MUTING
D904
D905
Q301
SOUND CONTROL
Q903
SWITCHING
+B
Q805
SWITCHING
VR681
(VOLUME)
D305, D306
Q501
MUTING CONT.
Q635
LED DRIVE
Q634
LED DRIVE
D638
D640
Q638
LED DRIVE
Q637
LED DRIVE
D643
D646
55
S.V.
8
VOL_JOG1
9
VOL_JOG2
54
PCONT1
6
DCDET
53
MUTE A
88
LED_GRN
89
LED_BLE
IC502
MN101C49KCB1
SYSTEM CONTROL/LCD DRIVE
PCONT2
25
HALT
27
PCONT2
HALT

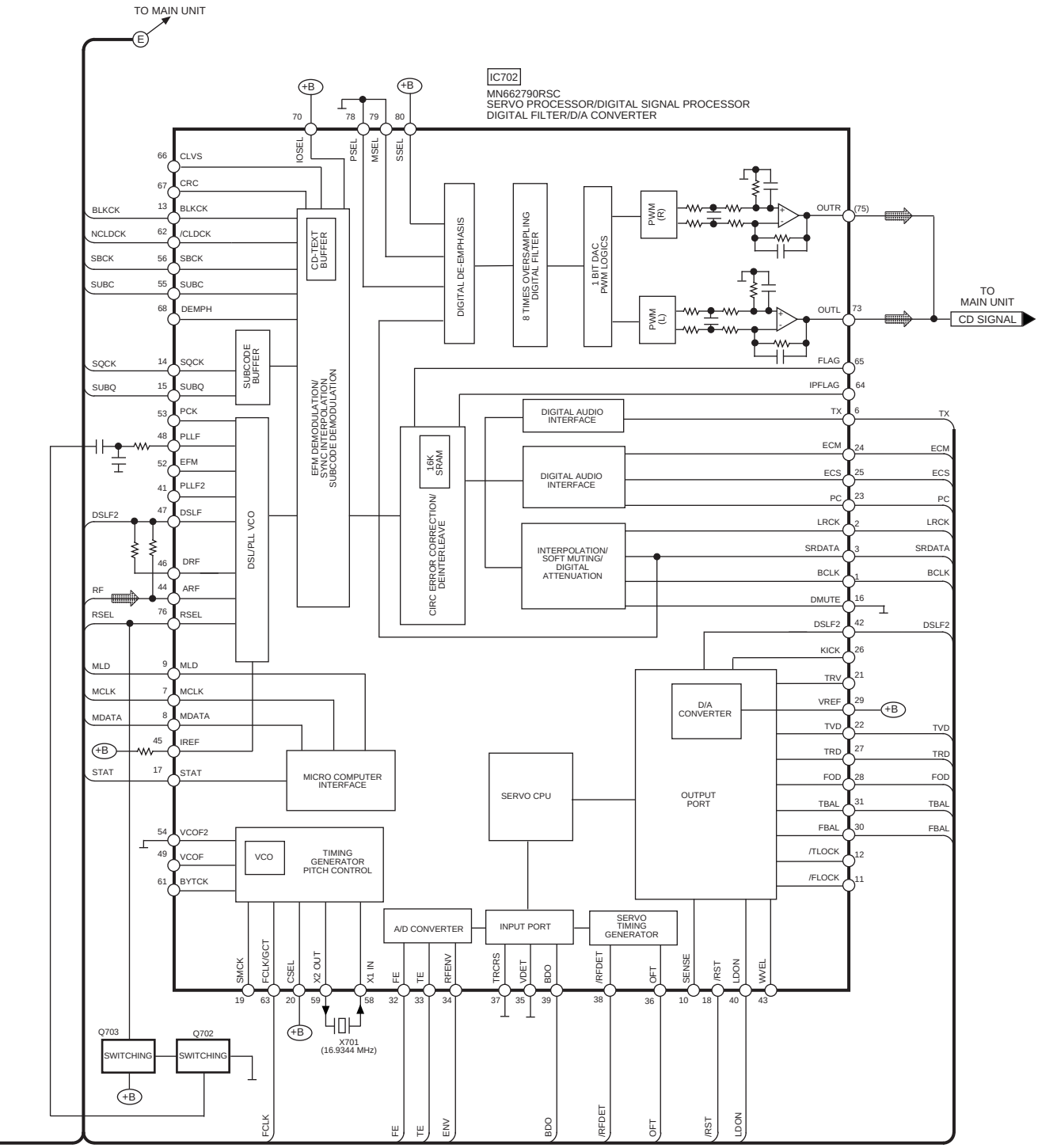
SIGNAL LINES

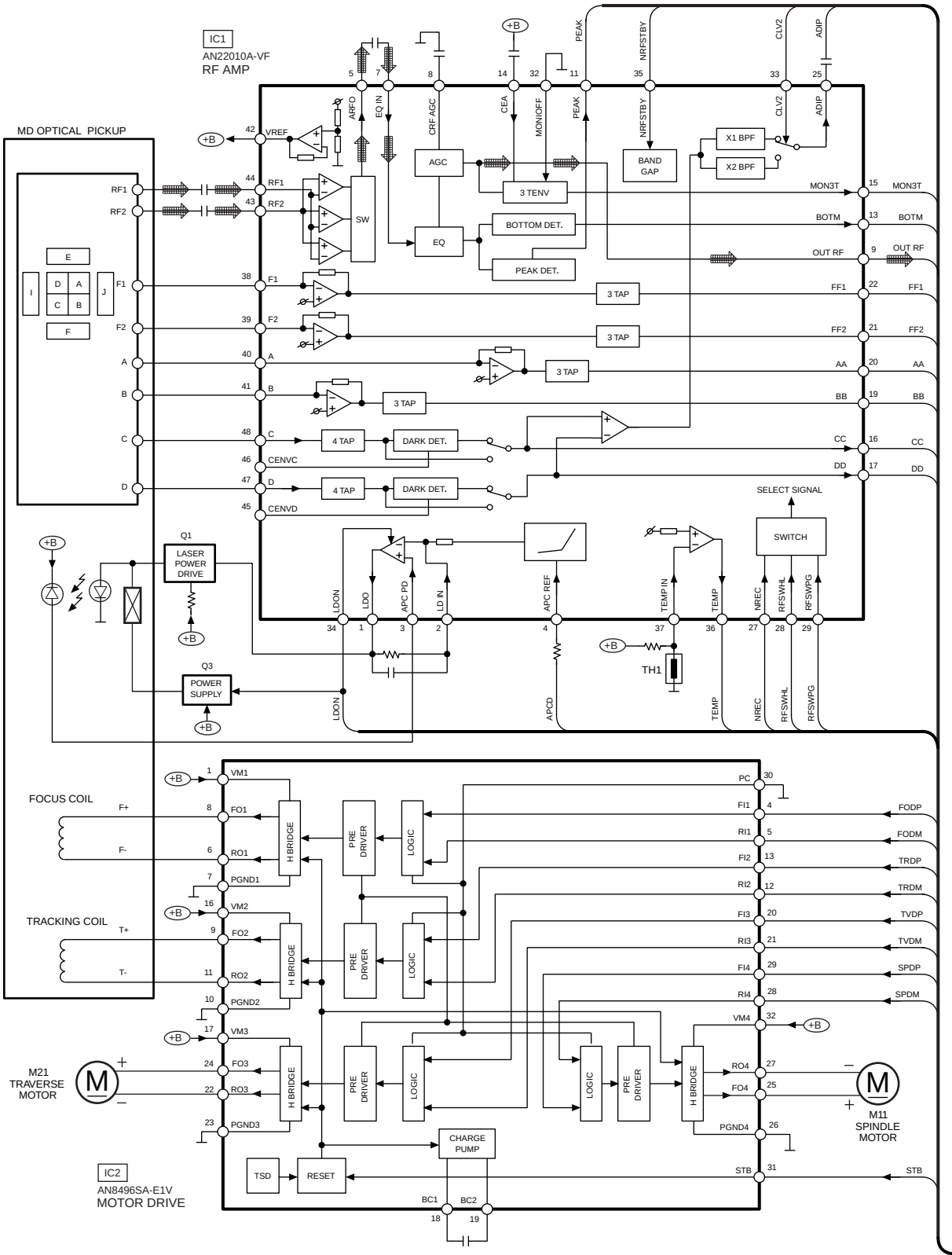
: MAIN SIGNAL LINE
: CD SIGNAL LINE
: AM SIGNAL LINE
: PLAYBACK SIGNAL LINE
: FM OSC SIGNAL LINE
: AM OSC SIGNAL LINE
: FM & AM SIGNALS LINE
: RECORDING SIGNAL LINE
: FM SIGNAL LINE
: MD SIGNAL LINE
: MD REC SIGNAL LINE

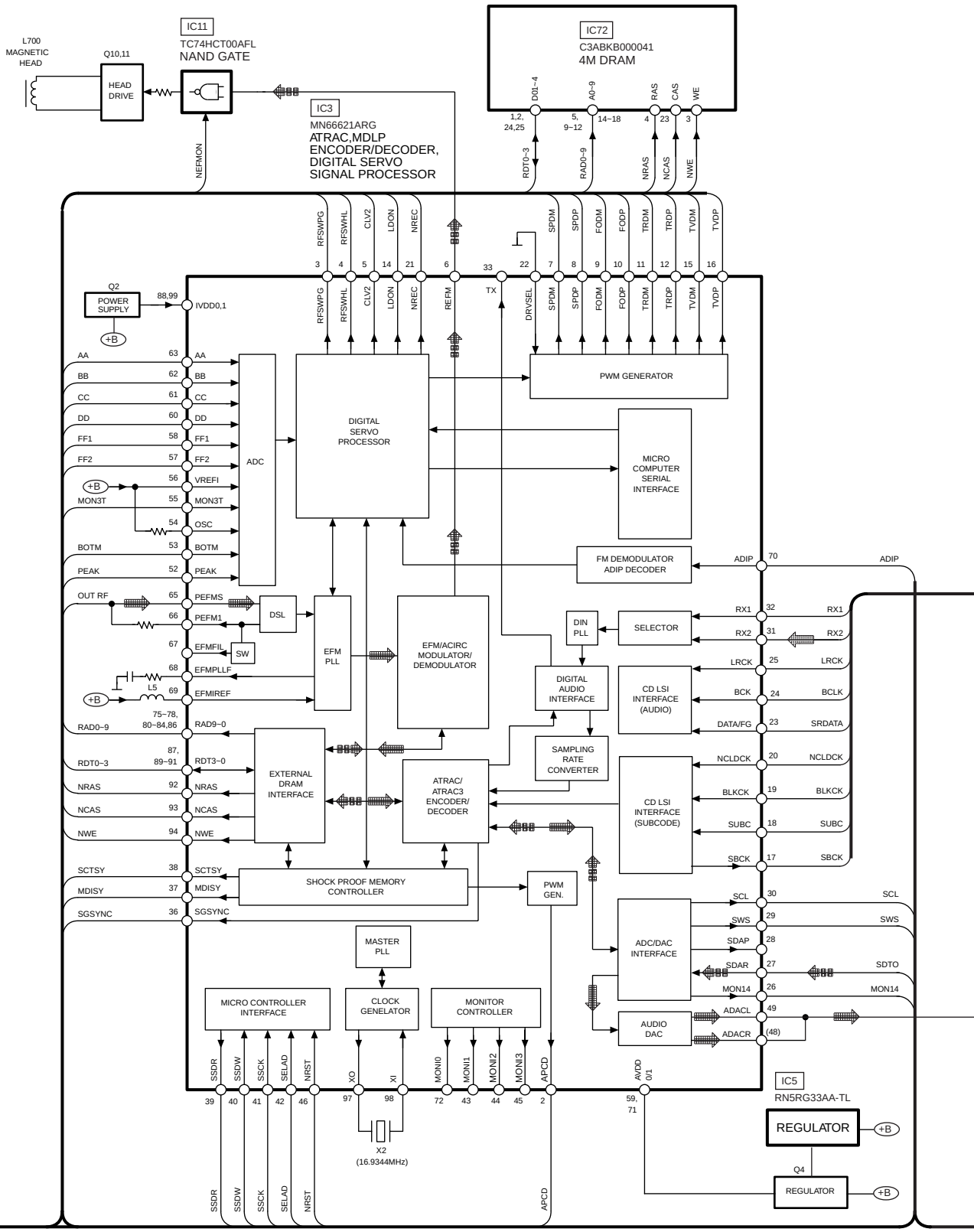
( ) indicates the Pin No. of Right channel.

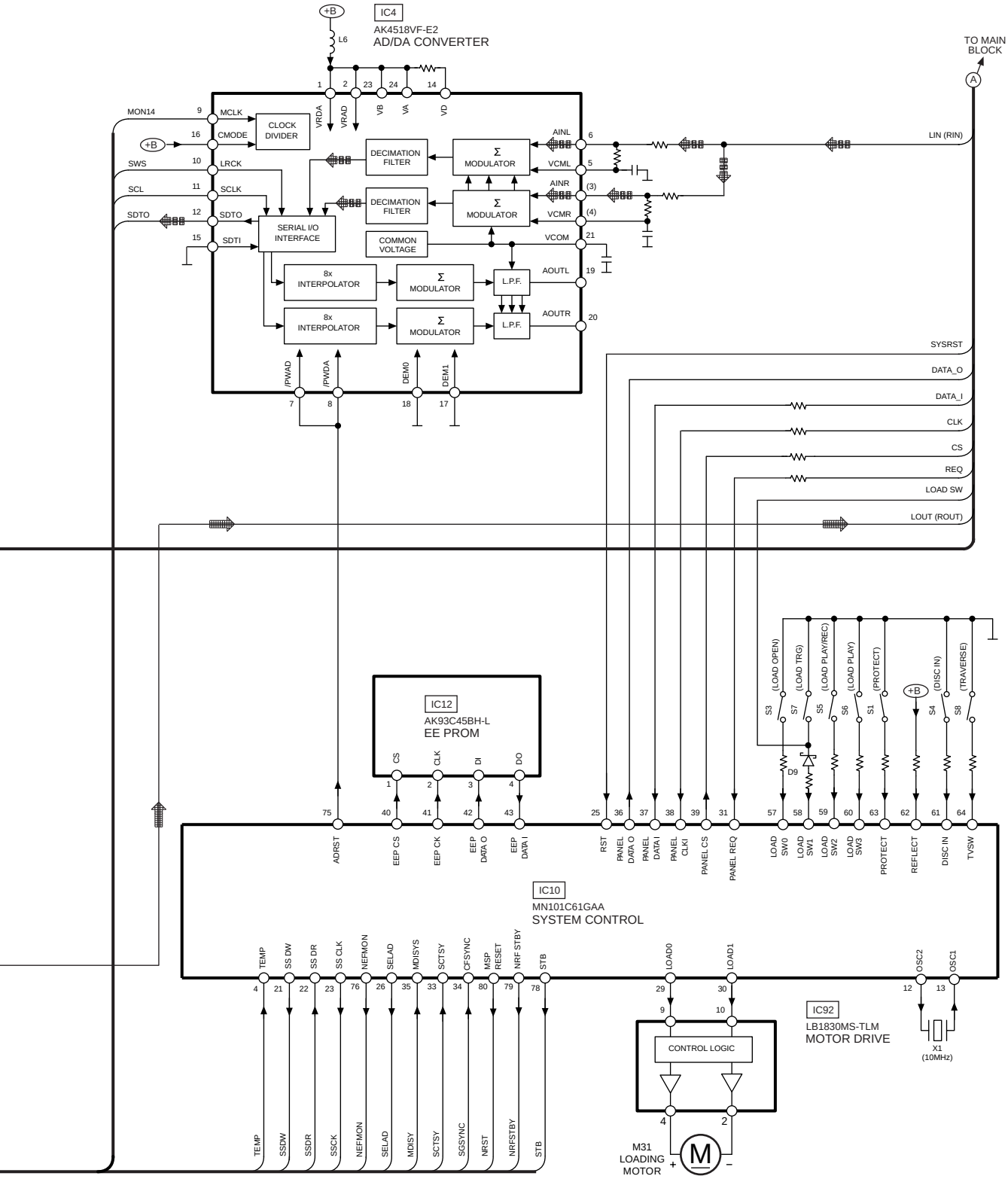


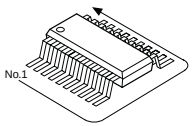
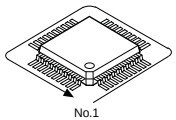
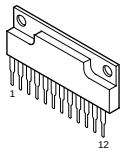
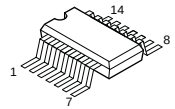
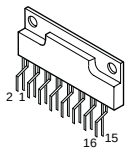
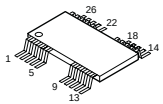
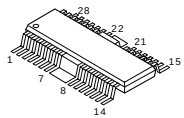
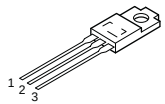
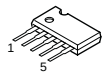
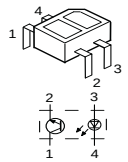
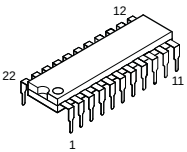
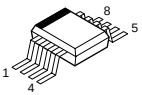
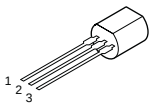
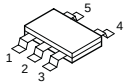
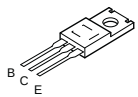
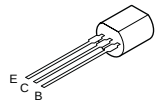
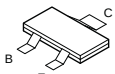
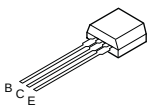
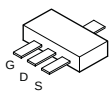
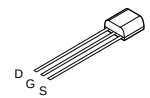
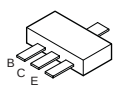
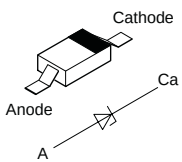
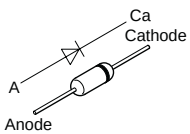
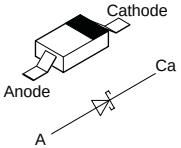
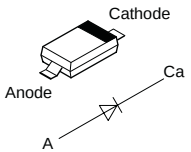
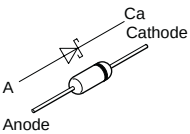
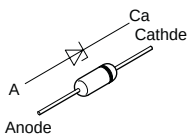
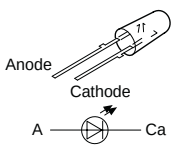
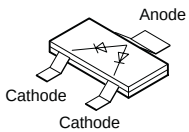
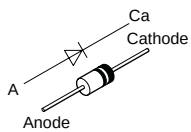
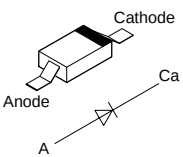
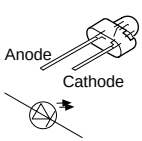
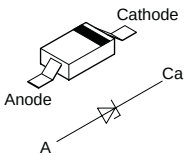
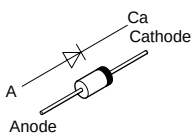

CD OPTICAL PICKUP
SEMICONDUCTOR LASER
PHOTO DETECTOR
Q701
LASER POWER DRIVE
IC701
AN8885SBE1
SERVO AMP
RF
RF IN
DEFLVL
CSBRT
CEA
OFTR
3TENV
BDO
NRF DET.
RFEQ1
RFEQ2
AMP
GCA
BCA
SUBTRA-CTOR
VREF
FE OUT
TE OUT
TEN
FEN
ENV
OFT
/RFDET
FE
TE
BAND GAP
LDON
PDOWN
EQSW
GCTL
TBAL
FBAL
RSEL
FCLK
LPD
LD
PDA
PDB
PDE
PDF
FOCUS COIL
TRACKING COIL
M701 TRAVERSE MOTOR
M702 SPINDLE MOTOR
LEVEL SHIFT
[CH1]
[CH2]
[CH3]
[CH4]
MUTE [CH1]
MUTE [CH2]
IC703
BA5948FPE2
FOCUS COIL/TRACKING COIL/TRAVERSE MOTOR/ SPINDLE MOTOR DRIVE
FOD
TRD
LOADING
TVD
ECS
ECM
PC


TO MAIN UNIT
E
IC702
MN662790RSC
SERVO PROCESSOR/DIGITAL SIGNAL PROCESSOR
DIGITAL FILTER/D/A CONVERTER
+B
70
78
79
80
IOSEL
PSEL
MSEL
SSEL
66 CLVS
67 CRC
BLKCK 13 BLKCK
NCLDCK 62 /CLDCK
SBCK 56 SBCK
SUBC 55 SUBC
68 DEMPH
SQCK 14 SQCK
SUBQ 15 SUBQ
53 PCK
48 PLLF
52 EFM
41 PLLF2
DSLF2 47 DSLF
46 DRF
RF 44 ARF
RSEL 76 RSEL
MLD 9 MLD
MCLK 7 MCLK
MDATA 8 MDATA
+B 45 IREF
STAT 17 STAT
54 VCOF2
49 VCOF
61 BYTCK
CD-TEXT BUFFER
SUBCODE BUFFER
EFM DEMODULATION/
SYNC INTERPOLATION
SUBCODE DEMODULATION
DSU/PLL VCO
DIGITAL DE-EMPHASIS
8 TIMES OVERSAMPLING DIGITAL FILTER
1 BIT DAC PWM LOGICS
PWM (R)
PWM (L)
OUTR (75)
OUTL 73
TO MAIN UNIT
CD SIGNAL
FLAG 65
IPFLAG 64
16K SRAM
CIRC ERROR CORRECTION/ DEINTERLEAVE
DIGITAL AUDIO INTERFACE
DIGITAL AUDIO INTERFACE
INTERPOLATION/ SOFT MUTING/ DIGITAL ATTENUATION
TX 6 TX
ECM 24 ECM
ECS 25 ECS
PC 23 PC
LRCK 2 LRCK
SRDATA 3 SRDATA
BCLK 1 BCLK
DMUTE 16
DSLF2 42 DSLF2
KICK 26
TRV 21
VREF 29 +B
TVD 22 TVD
TRD 27 TRD
FOD 28 FOD
TBAL 31 TBAL
FBAL 30 FBAL
/TLOCK 12
/FLOCK 11
D/A CONVERTER
OUTPUT PORT
MICRO COMPUTER INTERFACE
SERVO CPU
VCO
TIMING GENERATOR PITCH CONTROL
A/D CONVERTER
INPUT PORT
SERVO TIMING GENERATOR
SMCK 19
FCLK/GCT 63
CSEL 20
X2 OUT 59
X1 IN 58
FE 32
TE 33
RFENV 34
TRCRS 37
VDET 35
BDO 39
/RFDET 38
OFT 36
SENSE 10
/RST 18
LDON 40
WVEL 43
+B
X701 (16.9344 MHz)
Q703
SWITCHING
Q702
SWITCHING
+B
FCLK
FE
TE
ENV
BDO
/RFDET
OFT
/RST
LDON


IC1
AN22010A-VF
RF AMP
MD OPTICAL PICKUP
VREF
RF1
RF2
SW
AGC
EQ
3 TENV
BOTTOM DET.
PEAK DET.
BAND GAP
X1 BPF
X2 BPF
3 TAP
4 TAP
DARK DET.
CENVC
CENVD
MON3T
BOTM
OUT RF
FF1
FF2
AA
BB
CC
DD
SELECT SIGNAL
SWITCH
LASER POWER DRIVE
Q1
Q3
POWER SUPPLY
TH1
LDON
LDO
APC PD
LD IN
APC REF
TEMP IN
TEMP
NREC
RFSWHL
RFSWPG
APCD
FOCUS COIL
TRACKING COIL
M21 TRAVERSE MOTOR
M11 SPINDLE MOTOR
H BRIDGE
PRE DRIVER
LOGIC
CHARGE PUMP
TSD
RESET
IC2
AN8496SA-E1V
MOTOR DRIVE
FODP
FODM
TRDP
TRDM
TVDP
TVDM
SPDP
SPDM
STB


L700
MAGNETIC
HEAD
Q10,11
HEAD
DRIVE
IC11
TC74HCT00AFL
NAND GATE
NEFMON
IC3
MN66621ARG
ATRAC,MDLP
ENCODER/DECODER,
DIGITAL SERVO
SIGNAL PROCESSOR
IC72
C3ABKB000041
4M DRAM
D01~4
A0~9
RAS
CAS
WE
1,2,
24,25
5,
9~12
14~18
4
23
3
RDT0~3
RAD0~9
NRAS
NCAS
NWE
RFSWPG
RFSWHL
CLV2
LDON
NREC
REFM
TX
DRVSEL
SPDM
SPDP
FODM
FODP
TRDM
TRDP
TVDM
TVDP
Q2
POWER
SUPPLY
88,99
IVDD0,1
+B
AA
BB
CC
DD
FF1
FF2
VREFI
MON3T
OSC
BOTM
PEAK
OUT RF
PEFMS
PEFM1
EFMFIL
SW
EFMPLLF
L5
EFMIREF
RAD0~9
RDT0~3
NRAS
NCAS
NWE
SCTSY
MDISY
SGSYNC
ADC
DSL
EFM
PLL
DIGITAL
SERVO
PROCESSOR
EFM/ACIRC
MODULATOR/
DEMODULATOR
EXTERNAL
DRAM
INTERFACE
ATRAC/
ATRAC3
ENCODER/
DECODER
SHOCK PROOF MEMORY
CONTROLLER
PWM GENERATOR
PWM
GEN.
MICRO
COMPUTER
SERIAL
INTERFACE
FM DEMODULATOR
ADIP DECODER
DIN
PLL
DIGITAL
AUDIO
INTERFACE
SAMPLING
RATE
CONVERTER
SELECTOR
CD LSI
INTERFACE
(AUDIO)
CD LSI
INTERFACE
(SUBCODE)
ADC/DAC
INTERFACE
AUDIO
DAC
ADIP
RX1
RX2
LRCK
BCK
DATA/FG
NCLDCK
BLKCK
SUBC
SBCK
SCL
SWS
SDAP
SDAR
MON14
ADACL
ADACR
SRDATA
BCLK
SDTO
MASTER
PLL
MICRO CONTROLLER
INTERFACE
CLOCK
GENELATOR
MONITOR
CONTROLLER
SSDR
SSDW
SSCK
SELAD
NRST
XO
XI
MONI0
MONI1
MONI2
MONI3
APCD
AVDD
0/1
X2
(16.9344MHz)
IC5
RN5RG33AA-TL
REGULATOR
Q4
REGULATOR


IC4
AK4518VF-E2
AD/DA CONVERTER
+B
L6
TO MAIN BLOCK
A
MON14
+B
SWS
SCL
SDTO
MCLK
CMODE
LRCK
SCLK
SDTO
SDTI
CLOCK DIVIDER
SERIAL I/O INTERFACE
VRDA
VRAD
VB
VA
VD
DECIMATION FILTER
DECIMATION FILTER
Σ MODULATOR
Σ MODULATOR
COMMON VOLTAGE
8x INTERPOLATOR
8x INTERPOLATOR
Σ MODULATOR
Σ MODULATOR
L.P.F.
L.P.F.
AINL
VCML
AINR
VCMR
VCOM
AOUTL
AOUTR
LIN (RIN)
/PWAD
/PWDA
DEM0
DEM1
SYSRST
DATA_O
DATA_I
CLK
CS
REQ
LOAD SW
LOUT (ROUT)
IC12
AK93C45BH-L
EE PROM
CS
CLK
DI
DO
S3 (LOAD OPEN)
S7 (LOAD TRG)
S5 (LOAD PLAY/REC)
S6 (LOAD PLAY)
S1 (PROTECT)
+B
S4 (DISC IN)
S8 (TRAVERSE)
D9
ADRST
EEP CS
EEP CK
EEP DATA O
EEP DATA I
RST
PANEL DATA O
PANEL DATA I
PANEL CLK
PANEL CS
PANEL REQ
LOAD SW0
LOAD SW1
LOAD SW2
LOAD SW3
PROTECT
REFLECT
DISC IN
TVSW
IC10
MN101C61GAA
SYSTEM CONTROL
TEMP
SS DW
SS DR
SS CLK
NEFMON
SELAD
MDISYS
SCTSY
GFSYNC
MSP RESET
NRF STBY
STB
LOAD0
LOAD1
OSC2
OSC1
IC92
LB1830MS-TLM
MOTOR DRIVE
CONTROL LOGIC
X1
(10MHz)
M31
LOADING
MOTOR
TEMP
SSDW
SSDR
SSCK
NEFMON
SELAD
MDISY
SCTSY
SGSYNC
NRST
NRFSTBY
STB

| | | | | | |
|---|---|---|---|---|---|
|  | AK4518VF-E2 (24P)<br>LB1830MS-TLM (10P)<br>TC4052BFNELM (16P)<br>AN8496SA-E1V (32P)<br>AN8885SBE1 (28P)<br>BD3861FS-E2 (32P)<br>NJM2115V-TE1 (8P)<br>C1BB00000616 (28P)<br>C1BB00000527 (16P) |  | MN662790RSC (80P)<br>MN101CF61GAA (80P)<br>MN66621ARG (100P)<br>AN22010A-VF (48P)<br>MN101CP49KCB (100P) | AN7135<br>  | TC74HCT00AFL (14P)<br>TC74HCT7007A (14P)<br>TC74HC4050EL (16P)<br>C0JBAZ001800 (16P)<br>  |
| AN7194K-LD<br>  | C3ABKB000041<br>  | BA5948FPE2<br>  | UPC29M33HF<br>  | BA7755A<br>  | 0N2180RLC1<br>  |
| AN7326K<br>  | AK93C45BH-L<br>  | XC62CP3302TH<br>  | C0DBZHC00008<br>  | KTA1046<br>KTC2026<br>  | 2SC1845FTA<br>2SD592ARTA<br>2SD965RTA<br>KTA12710YTA<br>  |
|  | 2SA1037AKSTX<br>2SB1462STX<br>DTA143XKA146<br>DTC143XKA146<br>KRC104STA<br>KTA1540GRTA<br>KTC3875GRTA<br>KRC102STA<br>2SD2216STX | 2SA933ASTA<br>2SD2144STA<br>KRA102MTA<br>  | KRC111MTA<br>KRC101MTA<br>KRC102MTA<br>KRC119MTA<br>KRA110MTA<br>KRC114MTA<br>KTC3199GRTA | 2SJ278MYTR<br>2SK1764KYTR<br>  | 2SJ498CTA<br>  |
| 2SB1121ST-TD<br>  |  | UDZSTE175R1B<br>UDZTE173R9B<br>UDZSTE178R2B | RVD1SS133TA<br>MA165TA<br>  | MA728TX<br>  | SC80209TE12R<br>  |
| RB441Q40T77<br>  |  | MTZJ5R1BTA<br>MTZJ16ATA<br>MTZJ6R8ATA<br>MTZJ4R3BTA<br>MTZJ7R5BTA | LNW6B8GYFZ<br>LNW9A8BYBZ<br>  | DAP202KT146<br>RB715FT106<br>  | SB360L6508<br>  |
| 1SS355TE17<br>1SS380TE-17<br>  | LNJ301MPUJAD<br>LNJ201LPQJA<br>  | MA8056MTX<br>  | RL1N4003N02<br>  | | |

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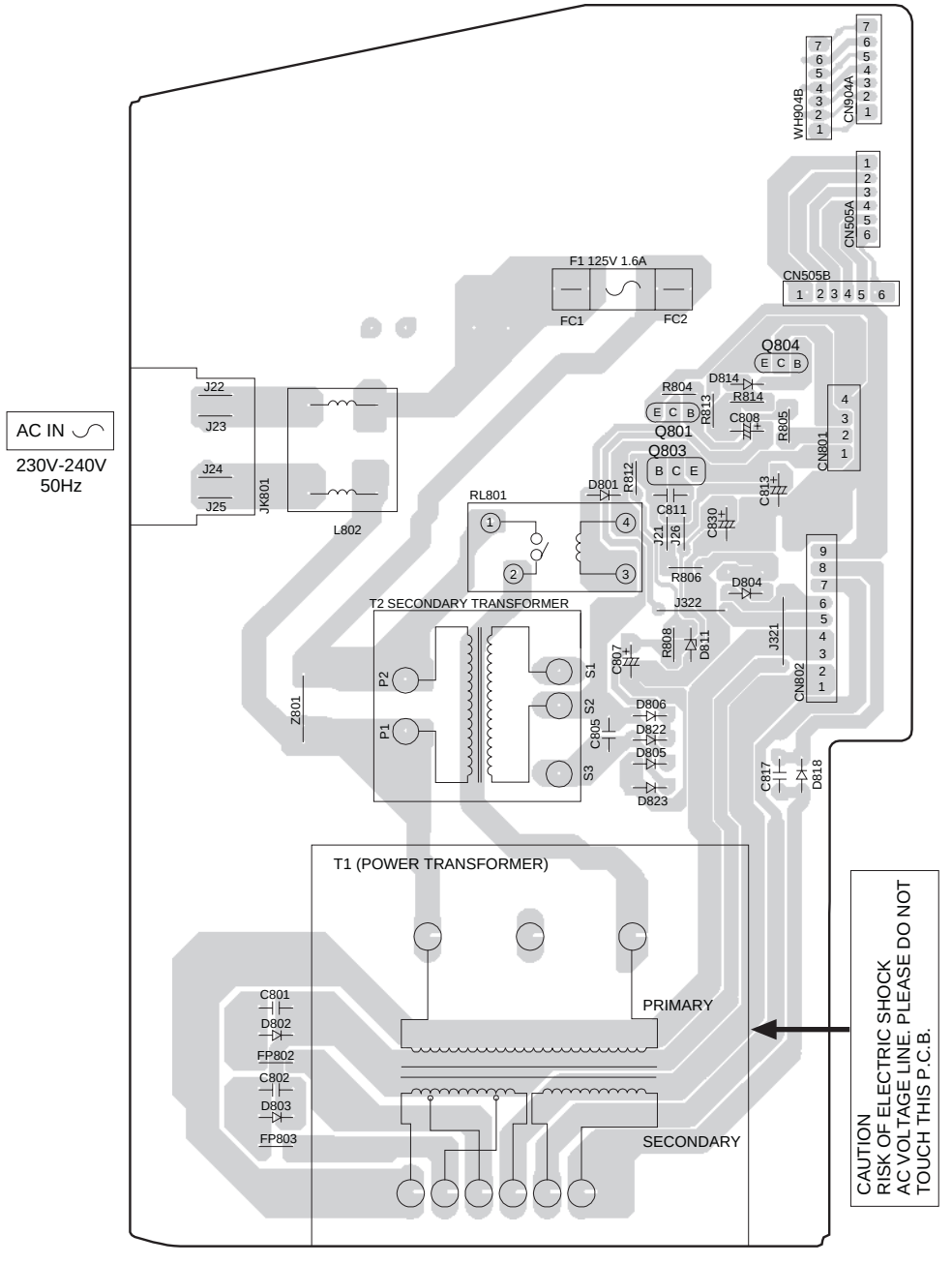
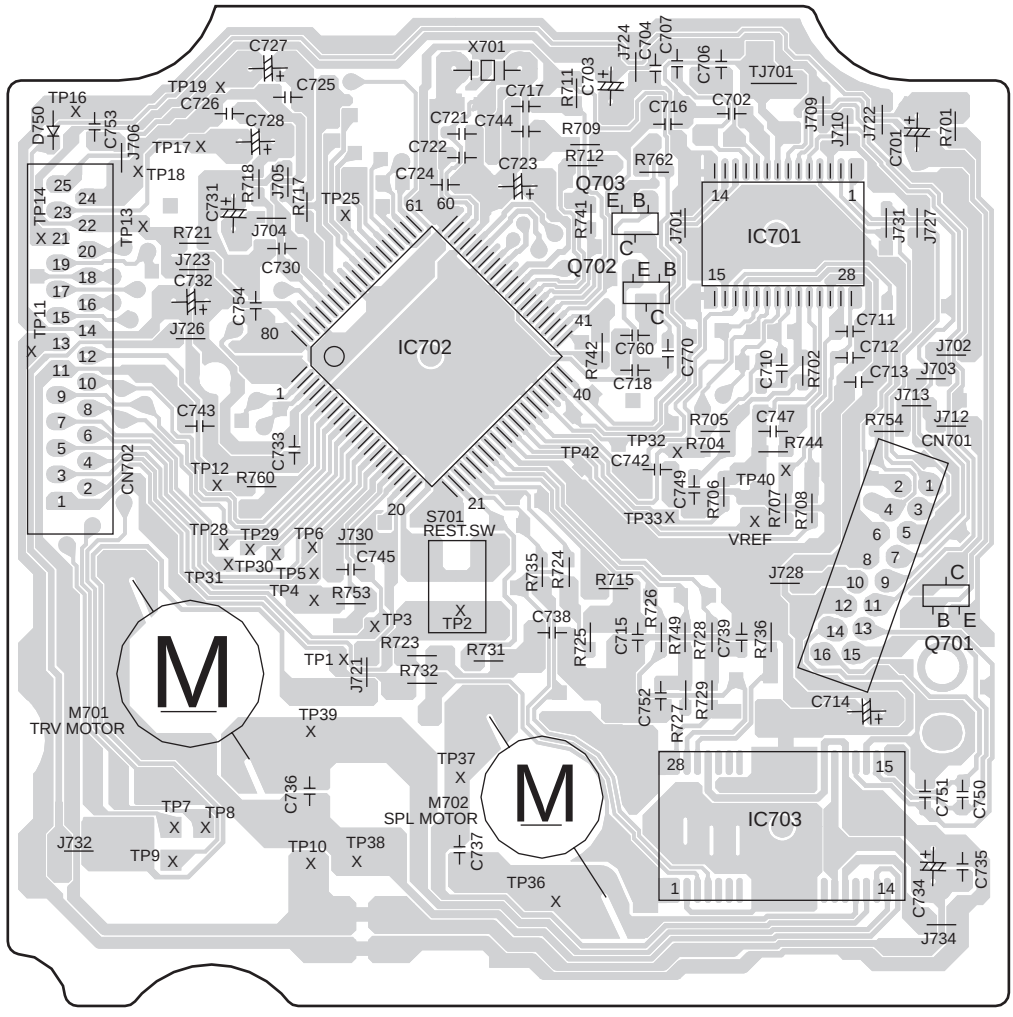


## C CD SERVO P.C.B (REP2807G)

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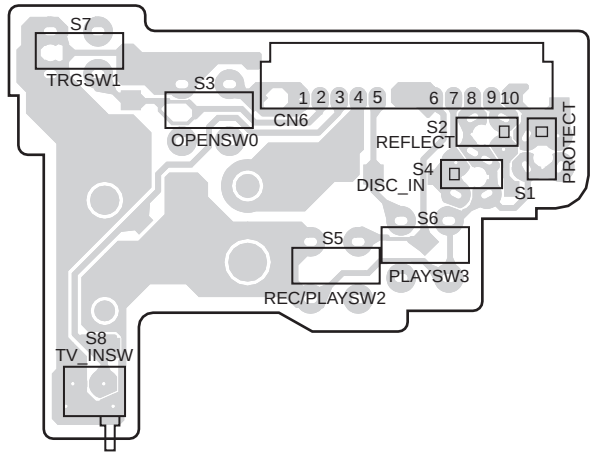
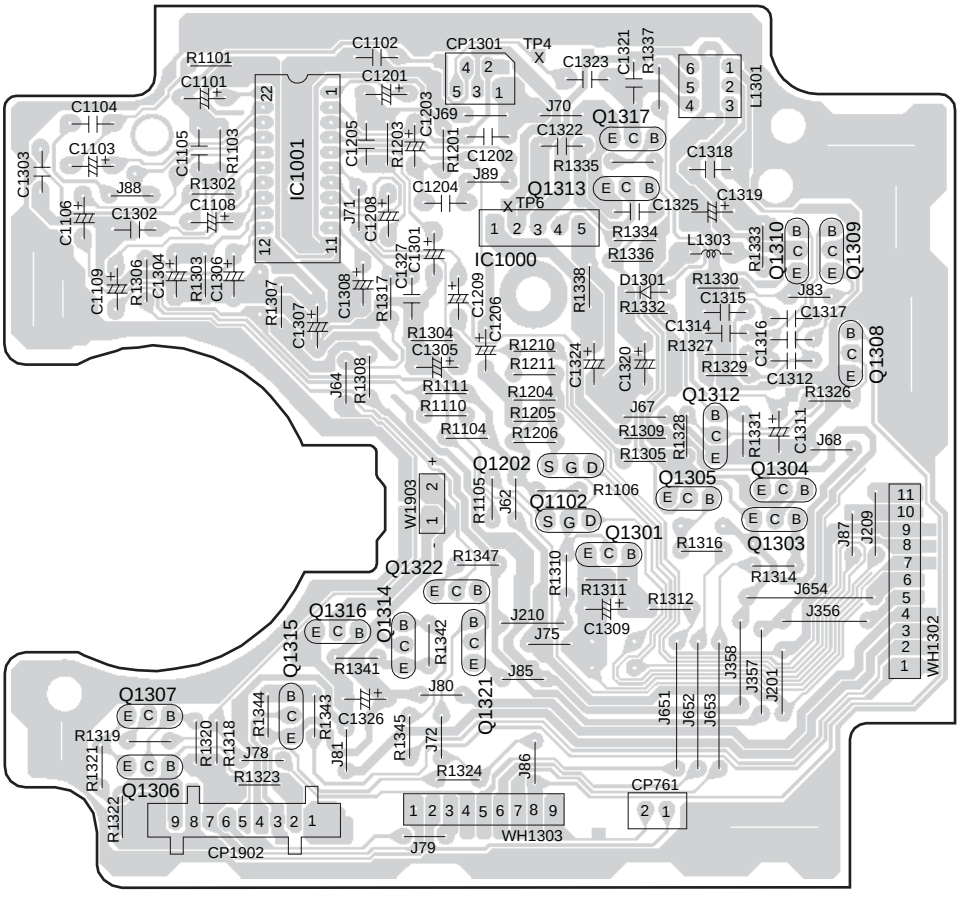


## H DECK P.C.B. (REP3193B)

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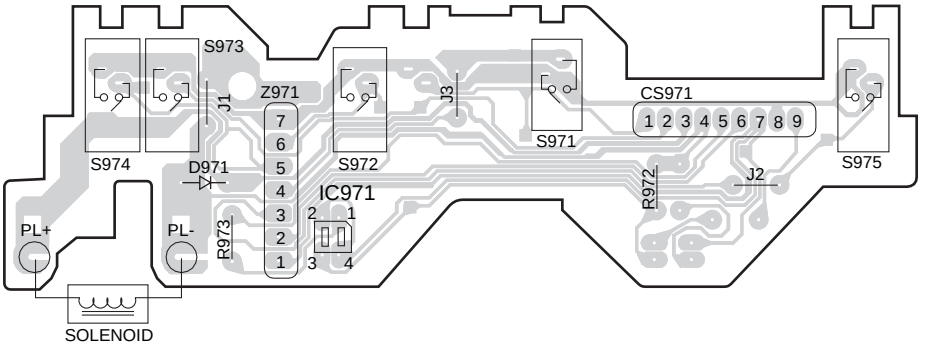
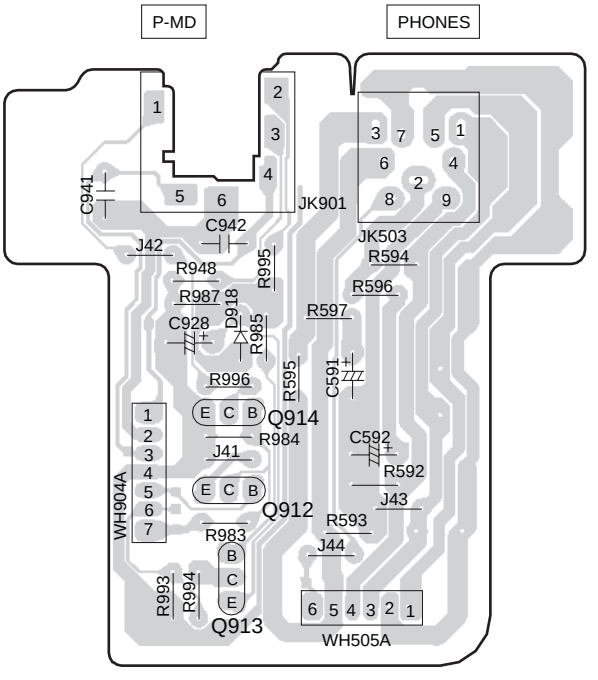
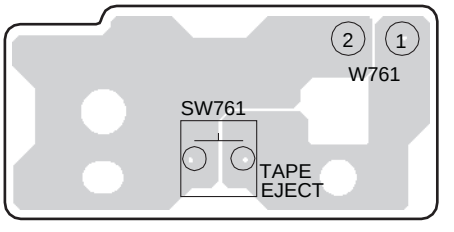


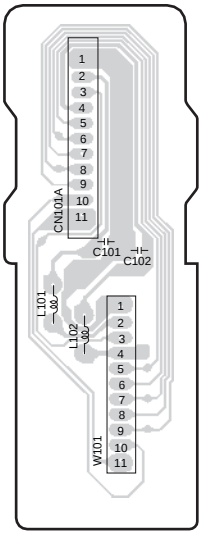
## N HEADPHONE P.C.B. (REP3193B)



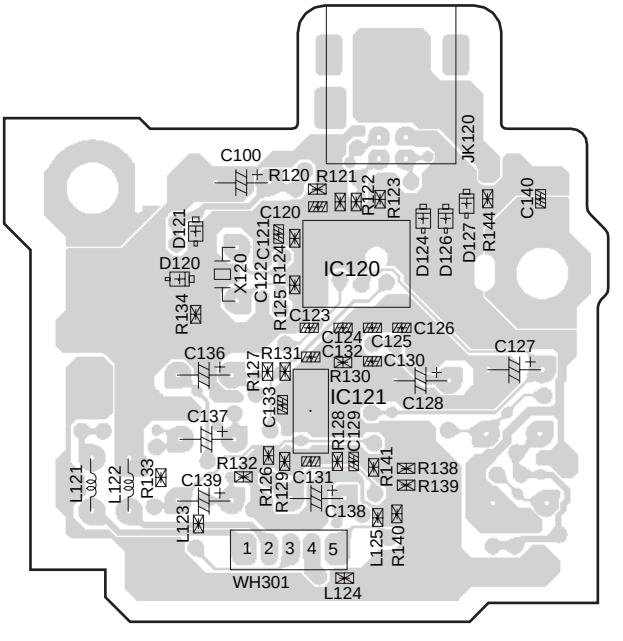

## O TAPE EJECT P.C.B. (REP3193B)




## E TUNER PACK P.C.B. (REP3192D)



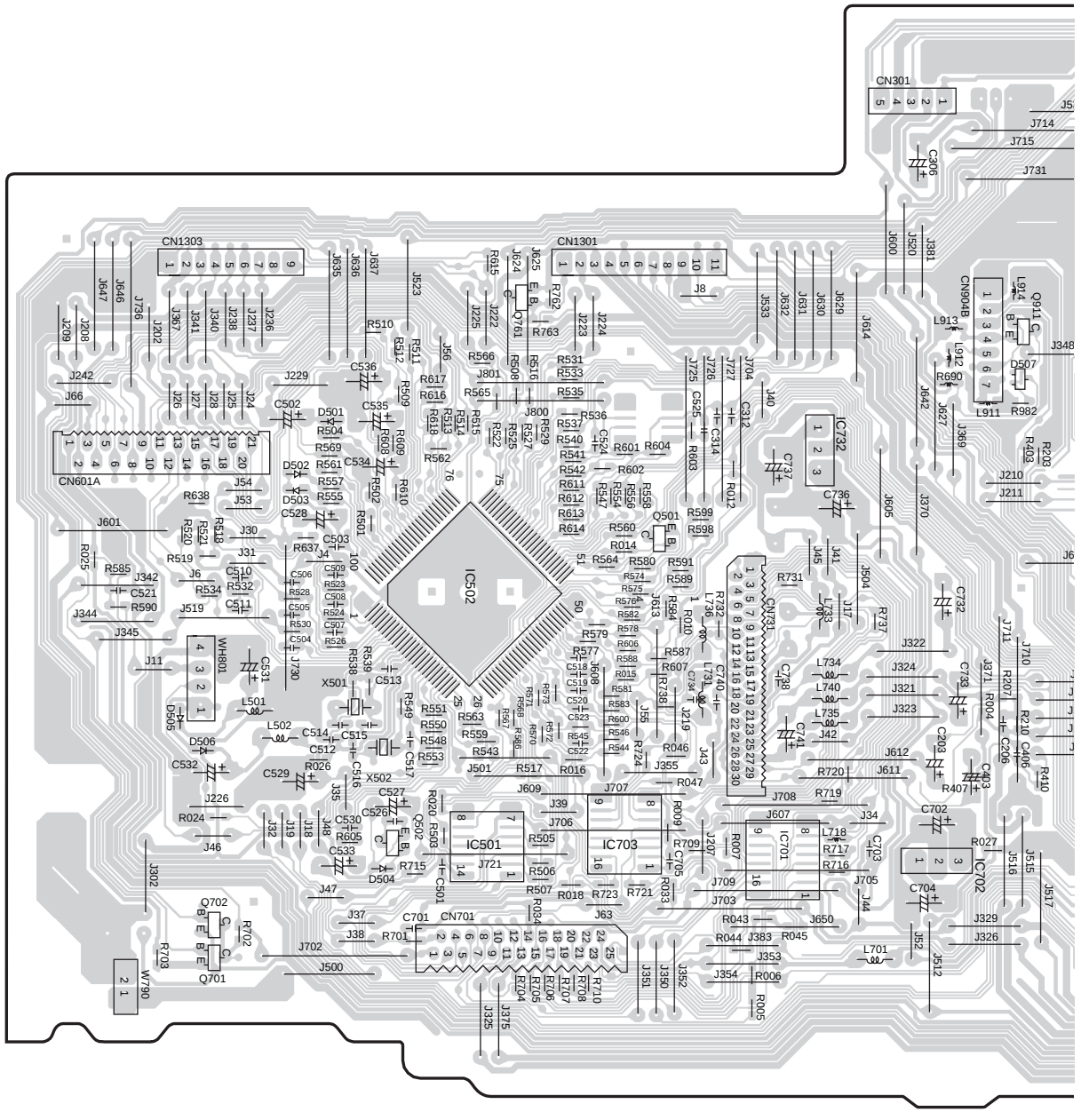

## J USB P.C.B. (REP3195A)



A B C D E F G

1 2 3 4 5 6 7 8 9

# D MAIN P.C.B. (REP3192D)



G H I J K L M


DIGITAL IN
AUX
CN301
CN101B
IC304
IC151
IC302
IC301
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JK731
JK301
LCH
RCH

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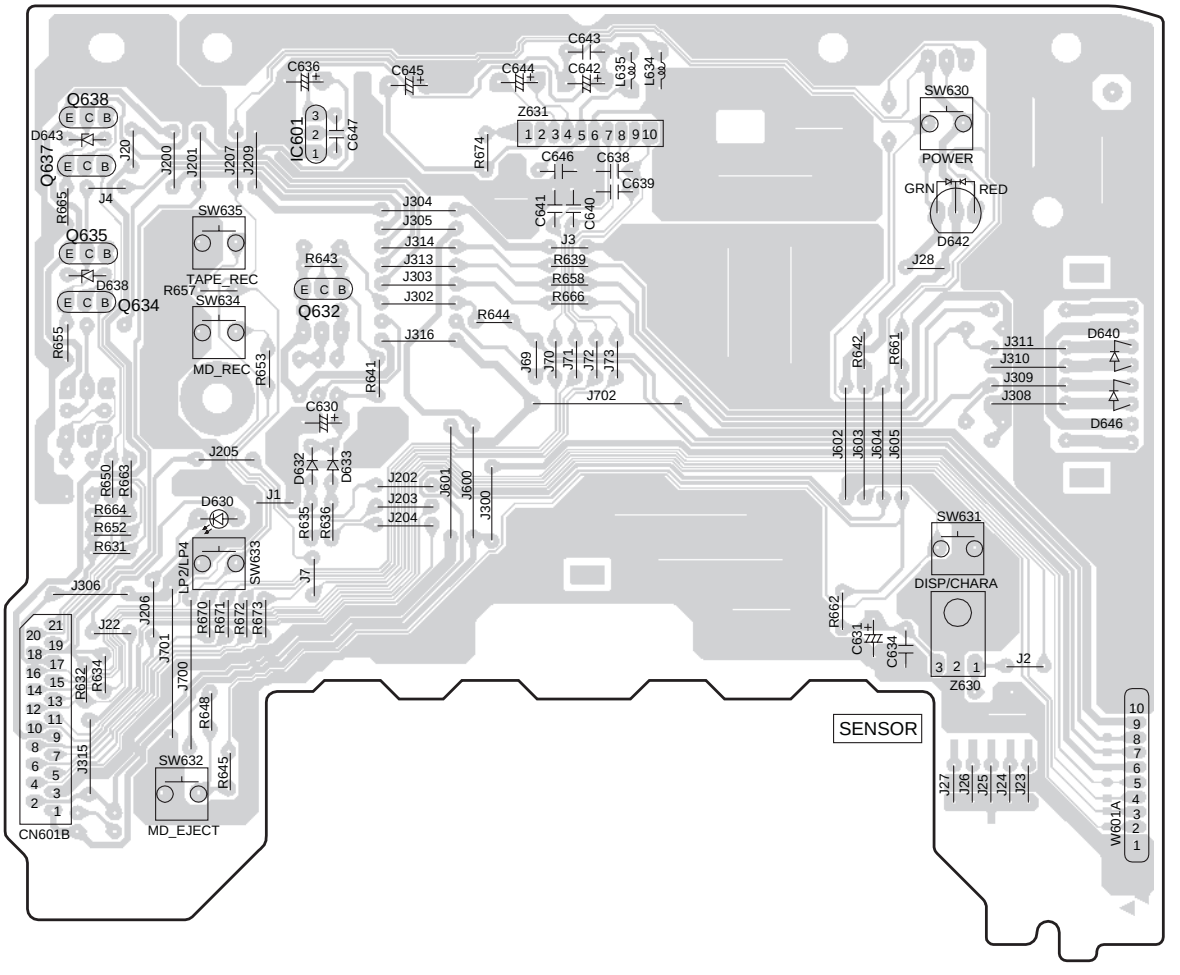
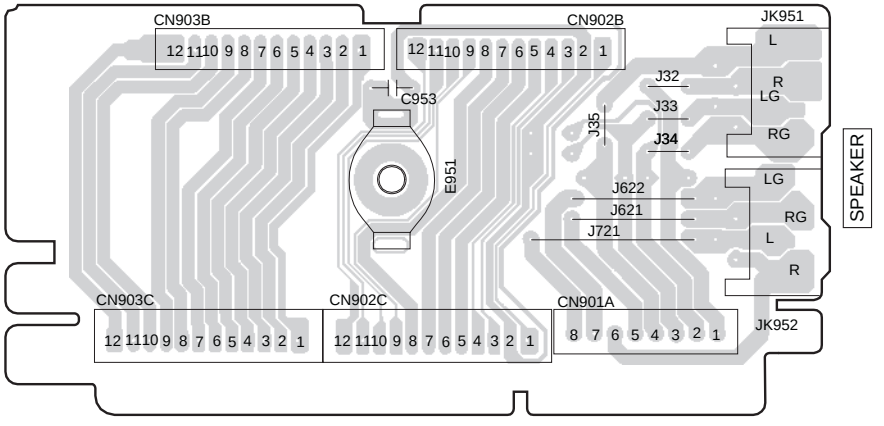



## L SPEAKER TERMINAL P.C.B. (REP3193B)



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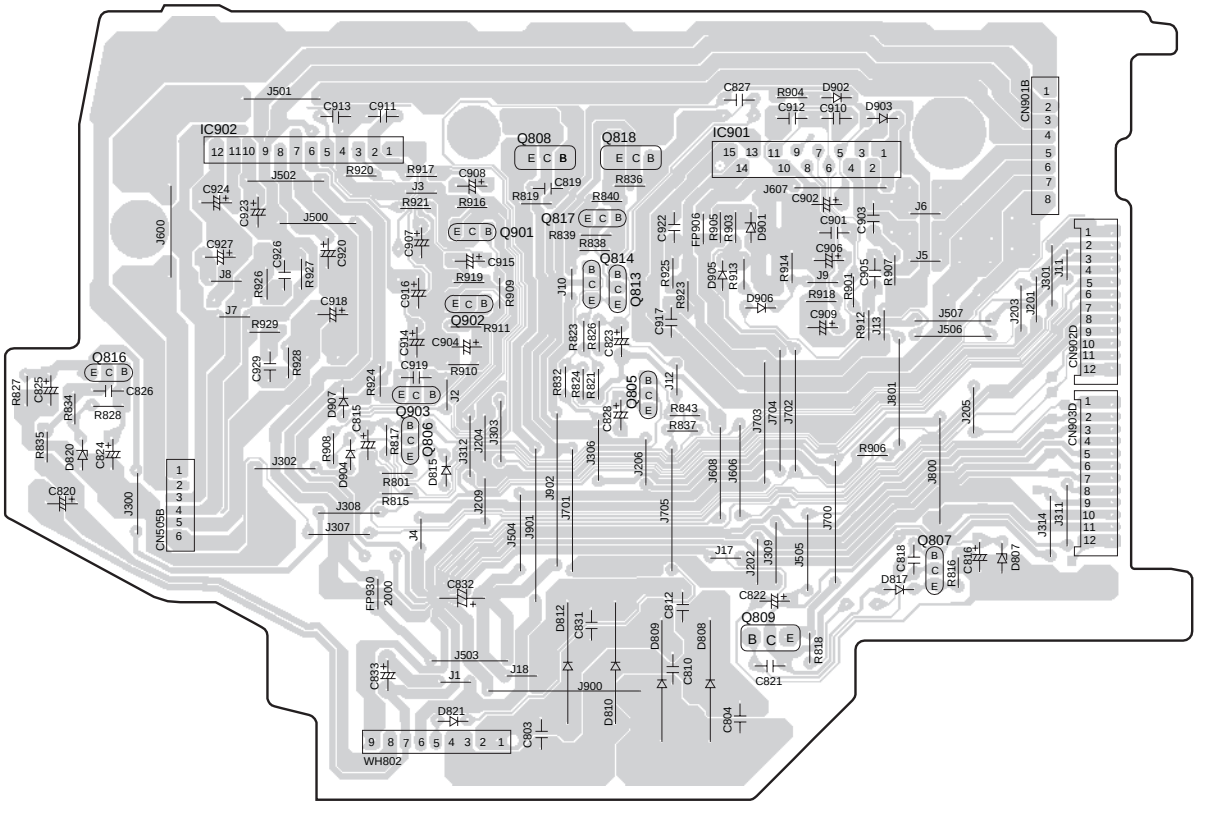
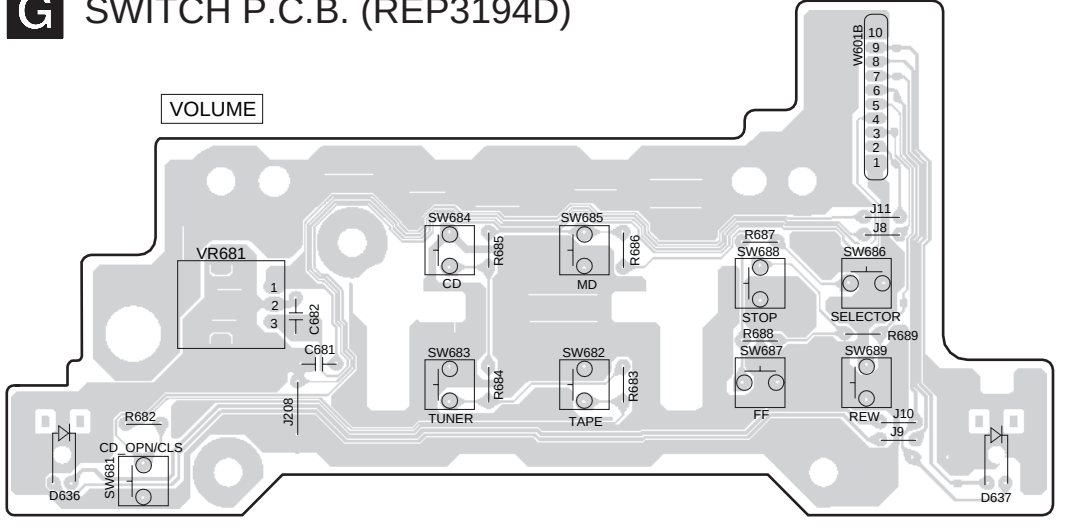
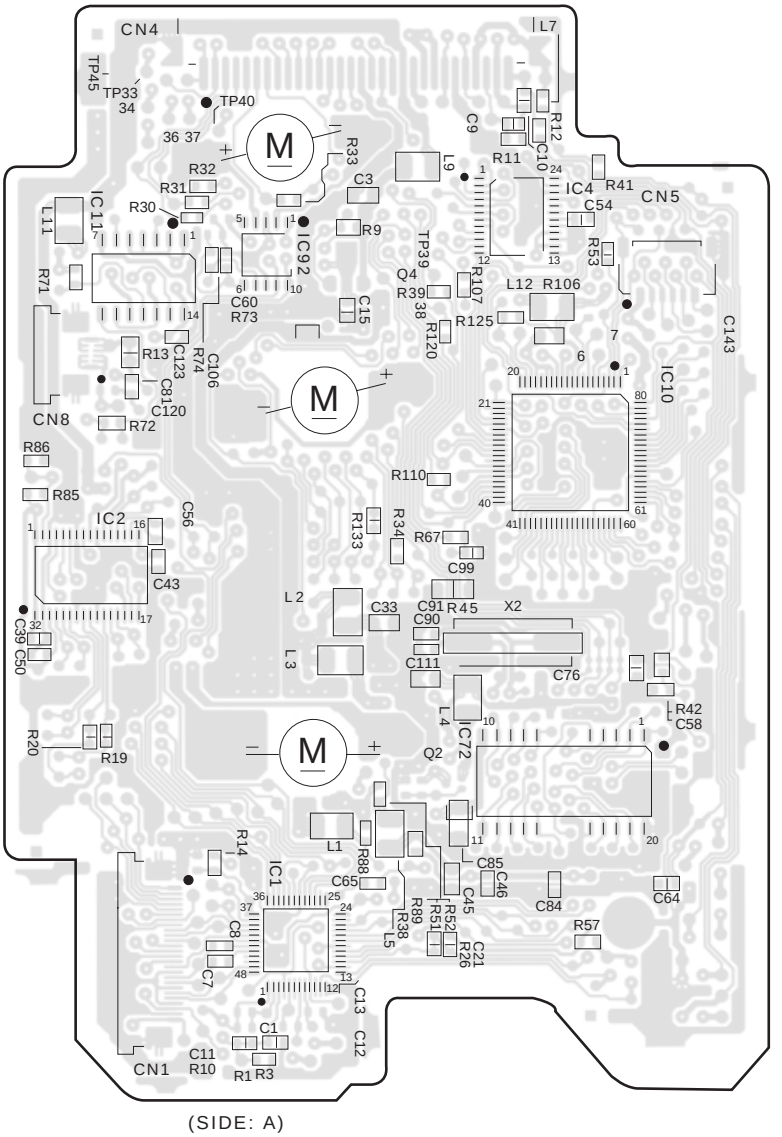



## G SWITCH P.C.B. (REP3194D)

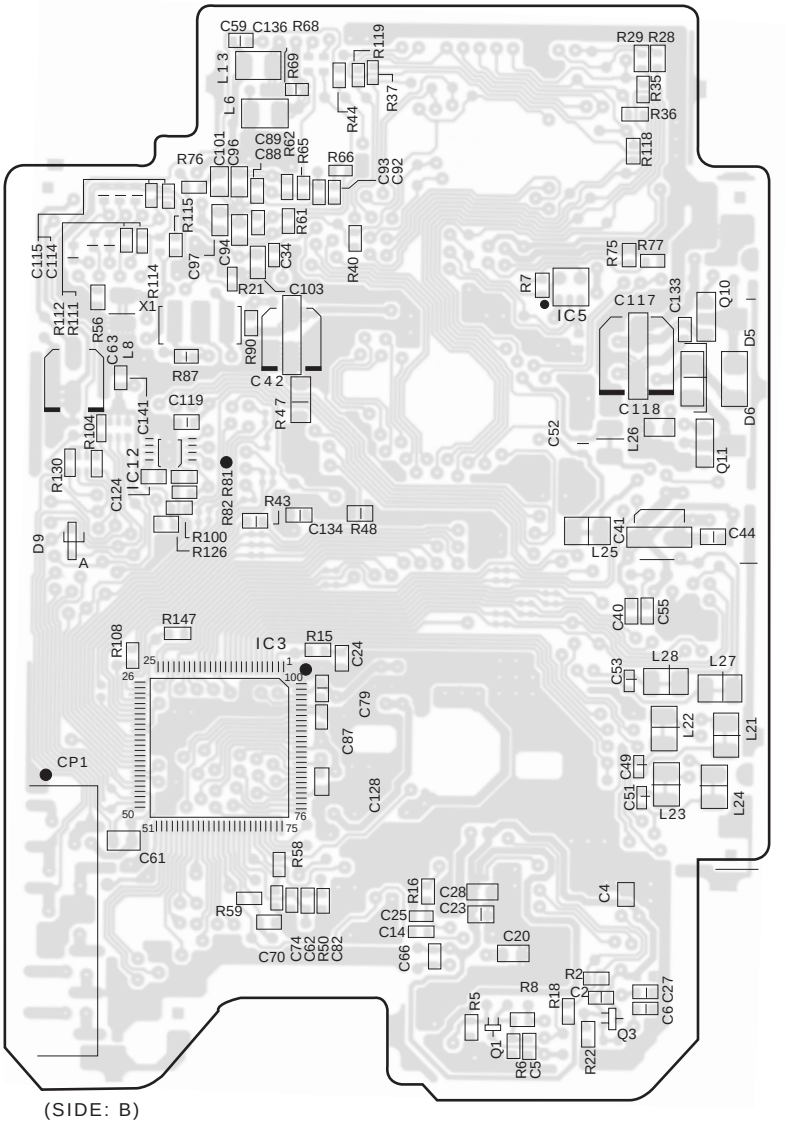


# A MD SERVO P.C.B. (REP3200A-2N)




(SIDE: A)

# A MD SERVO P.C.B. (REP3200A-2N)




(SIDE: B)